BUILD AND DEPLOY HYPERCARDS USING WORKSTATION
Thank you for participating in a workshop at MicroStrategy World 2019. If you missed or did not finish an exercise and want to complete it after the conference, use this workbook and access the supporting files at 

microstrategy.com/world-2019-workshops

*Workshop files will expire 4/30/2019*
Introduction

MicroStrategy 2019 introduces HyperIntelligence™, the biggest breakthrough in the world of analytics since Mobile. HyperIntelligence makes Zero-Click Intelligence™ a reality for every user throughout the organization—from salespeople and business analysts to executives and frontline employees. Developers can use Workstation to quickly build and deploy cards—a brand-new object available in MicroStrategy 2019 that are designed for use with the MicroStrategy HyperIntelligence extension in Google Chrome.

This hands-on workshop is an introduction to MicroStrategy’s HyperIntelligence capabilities focused on the creation, distribution, and consumption of cards. In this workshop, you will:

- Install the HyperIntelligence extension in Google Chrome
- Explore a set of out-of-the-box demo cards on topics like Fortune 500 companies and universities
- Create a cube to use as a dataset for your very own card
- Build a card in Workstation using the card editor
- Distribute cards to specific people or groups using access controls defined in Workstation
- Surf the web to see how the card you built works in real life

Deliver intelligence to 100% of the organization with HyperIntelligence

Every day the people in your organization read the news, browse the web, send and receive emails, and interact with a wide variety of web applications. As they perform these actions, they may encounter the names of contacts, organizations, or products that they would like to learn more about or that spark questions that require further analysis.

In situations like these, traditional analytics places the responsibility on the end user—forcing them to stop their current activity, open up an analytics tool, find the appropriate report or dashboard, and then locate the information they were looking for in the first place. With HyperIntelligence, organizations can seamlessly inject targeted intelligence directly into the web pages and applications that are used every day.
For example, a salesperson may receive an email from a customer whom she has not met, asking about a product that she has not encountered. In this context, the salesperson could simply mouse over the customer name in the email web app to pull up a picture, phone number, current title, and even information on past purchases. She can scroll over the customer's company name to identify key information like quarterly sales figures and the status of current contracts. Finally, to help with her sales pitch, she can even scroll over the name of the product to identify product price, margin, current discounts, and inventory figures. Because each individual card can contain information from a variety of sources, MicroStrategy makes it easy for card creators to bring together formerly disparate enterprise data and arm people with the information they need to confidently make decisions in the moment.
HyperIntelligence enables organizations to seamlessly deliver critical data to every user through cards that contain KPIs and additional information about specific topics. By integrating enterprise data with the web applications that people already use, organizations can remove the traditional barriers to the adoption of analytics and bring intelligence to a wider range of users across the enterprise than ever before possible.

Workshop software setup

HyperIntelligence delivers data to users through cards in Google Chrome. Users design, format, and administer cards in MicroStrategy Workstation. Those who are granted access can then view cards in their MicroStrategy HyperIntelligence Chrome extension. In this workshop, you will perform hands-on exercises in both Workstation and the HyperIntelligence extension.

Use the following steps to download and install MicroStrategy Workstation.

**Install Workstation**

1. In your browser, visit the download link provided by your instructor.

2. Extract the files from the downloaded .zip folder.

3. *If you are using a PC and have MicroStrategy Desktop installed on your laptop please, uninstall it.*

4. Open the extracted folder and double-click **WorkstationSetup**.

5. Follow the steps in the installer to complete the Workstation installation.

Use the following steps to download the MicroStrategy HyperIntelligence Chrome extension from the Chrome Web Store.

**Install the HyperIntelligence Chrome extension**

1. Open **Google Chrome**.

2. Visit the Google Chrome Web Store using the following URL: https://chrome.google.com/webstore/category/extensions

3. In the **Search the Store** box, enter **MicroStrategy HyperIntelligence**.
4. Click **Add to Chrome** next to the HyperIntelligence extension.

5. In the pop-up window, click **Add Extension**.

**Getting Started**

You are a data analyst for a major financial institution. Your organization has found that your sales team and wealth managers are not fully utilizing the information and existing dashboards that they have available to them. As a result, many have minimal knowledge regarding the financials of major, publicly traded companies. To resolve this issue and drive the further adoption of intelligence, your organization has decided to implement MicroStrategy HyperIntelligence to provide zero-click access to critical information.

Your goal in this workshop is to build, format, and distribute a card that elegantly displays key financial information for large companies.

**Exercise 1: Explore cards**

The MicroStrategy HyperIntelligence Chrome extension is initially connected to a demo environment that contains several pre-configured cards. This environment gives new users the opportunity to experiment with HyperIntelligence without needing to have a full-fledged MicroStrategy environment. In this exercise, you will turn on a demo card and perform a web search to bring up a related card.

**Analyze data on the web**

1. Open Google Chrome.

2. To the right of the address bar, click the MicroStrategy HyperIntelligence icon.

3. In the **Environment URL** field, make sure it says:  
   [https://demo.microstrategy.com/MicroStrategyLibrary/api](https://demo.microstrategy.com/MicroStrategyLibrary/api) and click **Continue**.
4. Under **Your Hyper Cards**, click the toggle switch to enable the **Universities** card.

5. In Chrome, perform a web search for **University**. Notice that in the search results some university names are underlined in blue.

6. In the search results, hover your cursor over one of the underlined universities. This will bring up a related card that displays admissions and demographic information about the school.
7. Perform a web search for your favorite university and examine its data using HyperIntelligence.

8. Turn on the Companies demo card, search the web for Fortune 500 Companies, and then analyze the data in the cards for those names that have been underlined in the search results.

Now that you are familiar with how cards and the HyperIntelligence Chrome extension work, you will connect Workstation to an environment and begin the process of building out a card.

Exercise 2: Connect Workstation to an environment

Today, employees rarely work on the same project from day to day. For example, a banking business analyst may need to analyze data, share compelling information and solutions, or implement new procedures or trainings for multiple branch locations on any given day.

MicroStrategy Workstation makes these tasks easier by providing you the tools to accomplish multiple goals all in one platform. Workstation is a unified tool that combines the power of MicroStrategy Library, user management, and content authoring into a single user experience. You can access dossiers, reports, Library, documents, datasets, and user management in Workstation. It enables you to generate insights offline or when connected to the server.

In this exercise, you will connect Workstation to a MicroStrategy on AWS environment that contains applications, dossiers, datasets, and users. In a later exercise, you will use this environment to import data for analysis, build and deploy cards, and manage user permissions.
Access your environment through Workstation

1. Open **MicroStrategy Workstation**.
2. In the navigation panel on the left, click **Environments**.
3. Under Available Environments on the right, click **Add New Environment Connection**.
4. In the Add New Environment Connection window, enter the following:
   - **Environment Name**: A unique name for your environment. For this exercise, you can use: **Hyperintelligence**
   - **Environment URL**: Type the following URL of the Library Web Server associated with your environment:
     
     ![Environment URL](https://env-XXXXXX.customer.cloud.microstrategy.com/MicroStrategyLibrary)
     
     Replace **XXXXXX** with the environment number provided by your instructor.
   - **Authentication Mode**: Standard
5. Click **Continue**.
6. In the Connect to Environment window, enter the login credentials for the user provided by your instructor, select **Remember Me**, and click **Connect**.
7. The applications (MicroStrategy projects) available in this connection are displayed. Select the MicroStrategy Tutorial check box.

8. Click OK. Under Available Environments, your environment should now display a status of Connected.

If your environment is not displayed, click Environments in the navigation panel on the left.

Now that you are connected to your environment through Workstation, you can start the process of creating cards.

**Exercise 3: Importing data and building a cube**

In MicroStrategy, every card is based off of a cube—a multi-dimensional dataset in MicroStrategy. The first step in building out a card in Workstation is identifying the dataset that you want to leverage. For the purposes of this workshop, you will use the Excel file Fortune 500 that you can find in the Supporting Files Folder. In this exercise, you will import the file as a cube and create a multi-form attribute that will be used as the subject of your card later in this workshop.

**Import your dataset**

1. From Workstation, in the left panel, click the “+” sign next to Datasets and then select HyperIntelligence\MicroStrategy Tutorial.

   *Mac Users will be brought directly to the Data Sources window and can proceed to step 2.*
2. Within the Data Sources window, select File From Disk from the available options.

3. Within the Local Drive window, select Choose files.

4. Navigate to where you have saved the Supporting Files Folder and select Fortune 500.xlsx

5. Click Prepare Data.

6. From the dataset objects view, hold down the Control key (Command Key on Mac OS) and multi-select the following attributes

- Address
- Ticker
- Title
- Website
7. Right-click on one of the highlighted attributes and then click **Create Multi-form Attribute** from the available options.

![Create Multi-form Attribute](image)

8. Define the multi-form attribute as follows by selecting the following from the **Form Category** drop-down menu:

   - **Title**: ID
   - **Website**: DESC
   - **Address**: Synonym 1
   - **Ticker**: Synonym 2

![Edit Multi-form Attribute](image)

9. Click **Submit**.

10. Click **Finish**.

11. Save the file as “**Fortune 500_firstname_lastname**” under the following path: `HyperIntelligence\MicroStrategy Tutorial\My Personal Objects\My Reports`

Now that your dataset has been saved you are ready to start building your card.

**Exercise 4: Create a card to display easily consumable data**

In order to deliver intelligence directly within the web browsing experience, you will need to create and format a card to display your information. The header of a card contains a keyword attribute, which serves as the basis of your analysis. When elements of this attribute are identified in the Chrome browser, they are highlighted, and will automatically bring up a relevant card when hovered over.
The body of the card is used to display related attributes and metrics that convey a set of desired information to users. As you design your card, you will employ a variety of formatting options to control its look and feel, including: header and text color, compact mode, linking, number formatting, and more.

**Create a card using Workstation**

1. From Workstation, in the left panel, click the “+” sign next to **Cards**

2. Browse through your folders to **My Reports**, find your recently saved dataset, click **Fortune_500Firstname_Lastname**, and then click **Select**. The New Card window opens.

3. Drag and drop the **Title** attribute on the card header to define the Keyword Attribute for this card.

*Each card is defined by a ‘Keyword Attribute,’ but by using multi-form attributes, card creators can also display secondary attributes in the card header (such as nickname, twitter handle, or email). These secondary attributes can also be used for synonym matching – broadening the list of potential matches that trigger a card in the browser. This is especially important in scenarios where an attribute element can be referred to by different aliases. For example, “Robert Jackson” may also be known throughout an organization as “Bob Jackson.”*
4. In the card header, click on the **Manage Attribute Forms** option.

5. Hover over **ID** and select **set as title**.

Notice that the company name is now displayed as the primary attribute in the card header instead of the company website.

6. Next, click on the Alternative Keywork Matching menu in the card header and select the check boxes next to **Synonym 1** and **Synonym 2**.
7. Drag and drop the following attributes and metrics to the KPI areas of the card:

- CEO
- Employees
- Rank
- Revenue ($M)
- Profit ($M)
- Assets ($M)
- Revenue Change
- Profit Change
- SE ($M)

Format the card’s visual design

8. Click on the **Header Background Color** icon in the top menu and then enter **FFDE17** in the Hex field.

9. Next change the **Header Font Color** to black.
10. Hover over the **Employees** box, click the menu icon in the top right, and then turn the “Auto” toggle off.
11. Toggle the **1000 separator** field on, and then click **Apply**.

12. Hover over the **Revenue ($M)** box, click the menu icon in the top right.

13. Select **Quick Format** and then make the following formatting changes:
   
   a. In the **Prefix** field, enter $. 

   b. Toggle the **1000 separator** field on.

14. Click **Apply**.

15. Repeat steps 12-14 for the following KPIs: **Profit ($M), Assets ($M), SE ($M)**

16. Hover over the **Revenue Change** box, click the menu icon in the top right.

17. In the **Decimal** field, enter 2 and click **Apply**.

18. Repeat steps 16-17 for **Profit Change**.

19. Next add a footer by clicking on **Footer** checkbox in the top menu.

20. Drag and drop the **Disclaimer** attribute into the footer.
Out-of-the-box card templates enable analysts to quickly build cards and control the number of KPIs that will be displayed on a given card (choose from layouts such as 2x2, 2x3, 3x3, etc.). Card creators can also leverage a “compact” mode that squeezes the height of a card – reducing white space and providing a cleaner look in certain layouts. Feel free to toggle compact mode on/off before you proceed to see how it affects the look and feel of your card.

Your card is now properly formatted and should now look similar to the image below:

Now would be a good time to save your work.

21. Click **Save**.

22. Navigate to **MicroStrategy Tutorial\My Personal Objects\My Reports** and in the **Save As** box, enter a name for your card in the following format: **LASTNAME_FIRSTNAME_card**
Link the card to a dossier

23. In the primary Workstation window, in the left panel, click **Dossiers**.

24. In the **Search** box, enter **Company Dossier**.

25. Right-click on **Company Dossier** from the search results, point to share, and select **Get Link**.

26. In the Get Link window, click **Copy** and then click **Close**.

27. In the New Card window, click on **Add a Link** in the header section of the card.

28. Enter the following information:
   a. In the **Link to** box, paste the copied link.
b. In the **Text to Display** box, enter **Company Dossier**.

![Image](https://env-XXXXX.customer.cloud.micros...

abc  Company Dossier

[Apply]

29. Click **Apply**.

30. Click **Save**

31. Close the **LASTNAME_FIRSTNAME_card** Window and return to the primary workstation interface.

**Exercise 5: Certify and distribute your card**

Once a card has been created, developers have the ability to share it with other users across the organization by granting view access via the card’s security access settings. It is important to note that only certified cards can be published to end users—ensuring that information surfaced to business users is vetted and trustworthy. A certified card is displayed with an orange certification ribbon in Workstation, as in the following image

![Image](TESTER_card)

By default, as the creator of the card, you are the only person who is able to execute the card in the MicroStrategy HyperIntelligence extension in Google Chrome. To distribute your card to other users within your organization, you must update the access privileges for the card and certify it. You can also provide access to users and groups to view the card in Workstation, edit its design, or provide full control over the card.

In this exercise, you will certify your card and assign privileges that grant access to your card.
Certify your card

1. From Workstation, in the left panel, click Cards.

2. Right-click the card that you created and click Certify from the available options. An orange certification icon is displayed, indicating that the data in the card has been vetted, and is ready for consumption.

Provide access to your card

3. Right-click your card and click Properties (Mac users click Get Info).

4. In the left panel, click Security Access. By default, your MicroStrategy account has Full Access privileges, meaning you can view, modify, delete, and execute this card.

5. In the Search box, type Patrick# (use the number provided to you by your instructor), and then click the user in the search results.

Note: Mac users will need to click on the “+” sign to add a new user.
6. From the Patrick drop-down list, select View (this is the default option on Mac so no further action is required). Patrick can now view the card in Workstation and execute the card in the Chrome extension—however, he cannot make any changes to the card in Workstation.

7. Click OK.

Cards behave just like any other first-level object in MicroStrategy. That means you can use Workstation to manage data security by applying security filters to datasets. A security filter allows you to control the attributes that users and groups can view in a specific dataset (and as a result within a dossier, report, document, or card). For example, say your environment has a dataset that contains data for all branch offices of Dunder Mifflin. As an administrator, you can use Workstation to add a security filter to the dataset that allows regional managers to only see data related to those offices within their region.

Exercise 6: Analyze data as you browse the web

Now that you have created a card in Workstation, you are ready to play the role of the end user and start consuming intelligence on the web. The card you created will be triggered by both the names of Fortune 500 companies as well as their stock ticker symbol (thanks to the alternative keyword matching you set up in Exercise 4).
Cards put expert knowledge and intelligence in hands of users where they already work. Your card can be displayed on any web page or web app, including productivity apps like Microsoft Office 365, Customer Relationship Management apps like Salesforce, and nearly any other browser-based content.

The data in the card is displayed as you hover over underlined keywords—all without the need to click. The intuitive layout, clean formatting, and aesthetic visual design enables users to quickly consume important information and make better, more informed decisions from within their existing day-to-day workflows.

Analyze data on the web

1. Open Google Chrome.

2. To the right of the address bar, click the MicroStrategy HyperIntelligence icon.
3. Click the **Configuration** icon in the top right corner of the menu, and then click **Settings**.

4. Click **Edit** next to the **Environment URL** field, and enter the following URL for the Library Web Server associated with your environment:

   https://env-XXXXXX.customer.cloud.microstrategy.com/MicroStrategyLibrary

   Replace **XXXXXX** with the environment number provided by your instructor.

5. Click **Save**.

6. To the right of the address bar, click the MicroStrategy Hyperintelligence icon.

7. In the **Username** and **Password** fields, enter the credentials provided by your instructor and click **Log In**.

8. Under **Your Hyper Cards**, toggle the switch next to the card that you created.

9. In Chrome, perform a web search for **Fortune 500**. The search engine will display results and highlight any attribute element matches in the cube.
10. Hover your cursor over one of the highlighted companies to pull up the related card.

11. From the card, click on the **Company Dossier** link. The dossier is displayed in a new tab in your browser for further analysis.
Note that the company names and stock tickers are underlined within the MicroStrategy dossier. In addition to MicroStrategy content, HyperIntelligence also works on top of other web-based analytical tools like Tableau Online or Microsoft Power BI.

12. Navigate back to your search results and perform another search for Microsoft.

Notice that both “Microsoft” and “MSFT” are highlighted and trigger the “Microsoft” card in the web browser.
13. Open your email web app. For example, if your organization uses Microsoft Outlook, you may be able to log in to the Outlook Web App using the following URL:
https://outlook.office.com/owa/
   a. In the To field, enter your own email address (the same email account that you are using to send the email)
   b. In the subject line, enter the following text: Microsoft Recap
   c. In the body of the email, enter the following text: Thank you for the information about Microsoft. I’m heading to Target tomorrow and I think this background will be really helpful.
   d. Send the email

14. When the new email arrives, open it and hover over Microsoft and Target to pull up the relevant cards.

15. In Chrome, next to the address bar, click the MicroStrategy HyperIntelligence icon.

16. Select the Disable extension on check box at the bottom on the window.
This action selectively disables the HyperIntelligence functionality on a specific page. Notice that the underlines in the email have disappeared. By default, the extension will work with any web-based content, however it is possible to blacklist individual websites. To blacklist a specific URL, click on the ‘Disable extension on’ checkbox, or navigate to the settings menu and enter the URL you wish to blacklist.

Congratulations
You have now completed the MicroStrategy Hyperintelligence: Build and Deploy HyperCards Using Workstation workshop. Over the course of this workshop you have:

- Learned about some of the capabilities of MicroStrategy HyperIntelligence
- Connected MicroStrategy Workstation to an environment
- Imported and modeled data in a cube
- Created, formatted, and customized a card containing relevant information
- Granted card access to a specific user by configuring access control settings
- Repointed the HyperIntelligence extension to your environment
- Accessed and analyzed information on web pages and in web applications through the card that you built

For more information on MicroStrategy with HyperIntelligence, MicroStrategy offers the 10.311 Administration for Enterprise Analytics course.

For resources and certifications with MicroStrategy Education, visit: https://www.microstrategy.com/us/services/education/.