Vision

Implement OneTag JS library in Google tag manager (GTM) in one click.

Objective

Automate OneTag Js library implementation in GTM
- Which unifies already implemented Ad Platforms base pixel and their events

Scope

- To build automation for replicating ad platform pixels implemented in Google tag manager with one tag.
  - Identify all the ad platform pixels, different event tags and the custom data parameters that are passing
  - Build a config file which stores information
    - Number of Total ad platform tags
      - Triggers attached with ad Platform tags
      - Type of ad platform tags
        - Type of events with those at platforms tags
          - Type of data that is passing with each event tag
  - Building OneTag JS & event codes based on the Config file
    - All the ad platforms GTM tags into one tag
      - Unify all the ad platform events with one event respectively
        - With respective events pass custom data parameters if Ad platforms are passing.
  - Implement OneTag JS library which combines
    - Attach triggers with OneTag GTM tags to combine all the ad platforms tags and their respective event Tags
  - Remove all the GTM ad platform tags and their events tags

Input

- Google Tag Manager container (Tags, Triggers & Variable) via APIs with Ad Platform Pixel Implementations

Output

- Updated Google Tag Manager Container with OneTag pixel
- Config file containing all the information for ad Platforms, events, data parameters

Functional Requirements

Use Case example : Container has Facebook & Google Ads tags with few events & data parameters

Step 1 : Identify all the ad platform pixels, different event tags and the custom data parameters that are passing

For Google Tag Manager APIs https://www.simoahava.com/tools/

Input

- Google Tag Manager Container (via GTM APIs or Container JSON)

Conditions

Platform	Type of Code	Condition Matches
Facebook	Base code	Contains connect.facebook.net/en_US/fbevents.js Starts with !function & Ends with fbevents.js');
	Event code	Contains "fbq("track" or "fbq('trackCustom'" Starts with "fbq(" & ends with ");" If it has custom parameters, parameters starts at , { & ends with "});"
GA4	GA4 Pageview Tag	
	GA4 Event Tag	
Snapchat	Base code	Contains scevent.min.js Starts with (function(e,t,n){if(e.snaptr) & ends with scevent.min.js');
	Event code	Contains snaptr('track',
Tiktok	Base code	Contains analytics.tiktok.com/i18n/pixel/events.js Starts with !function (w, d, t) { w.TiktokAnalyticsObject= & ends with parentNode.insertBefore(o,a)};
	Event code	Contains ttq.track('
Cretio	Base code	
	Event code	
Twitter		

Linked In		

Output   (Based on assumption)

List of

- Ad Platform : Google Ads, Facebook
- Base code : Google Ads, Facebook
- Events : Add To cart (Google, Facebook), Checkout (Facebook), Purchase (Google, Facebook)
- Data Parameters : Value (Add To cart, Purchase), Currency (Add To cart, Purchase), Content ID (Add To Cart)
- Data Parameters values :
    - Currency : {{ Currency}} as GTM variable
    - Value : {{transaction value }} as GTM variable

Step 2 : Build a config file which stores information

Input

- (Step 1)

Output

- Config file with all the mapping for unifying all the ad Platform

Step 3 : Building OneTag JS & event codes based on the Config file

Input

- Config file from Step 2

Output

- OneTag base code
- OneTag user identification code
- OneTag ad platforms, event, data parameters code

Step 4 : Implement OneTag JS library which combines

Input

- 3 types of code from Step 3

Output

- Updated GTM JSON with OneTag Code
    - Merged triggers for common events between the ad platform
    - GTM variables passing with keys for data parameters

Step 5 : Remove all the GTM ad platform tags and their events tags

Input

- Config file from step 3 & updated GTM from step 4

Output

- Further updated GTM JSON with OneTag Code
    - Paused ad platform tags, unused triggers, unused variables etc.

What is oneTag ?

Onetag is a part of Taghash, a saas solution built for first party data collection & integrations.

OneTag is a JavaScript library that enables data collection from Client websites with Taghash Setup. Onetag JS library contains base code, user identification info, ad platform specific info, event info.

Base code, example

```
<script>
 !function(){var
analytics=window.analytics=window.analytics||[];if(!analytics.initialize)if(analytics.invoked)window.console&&console.
error&&console.error("onetag snippet included
twice.");else{analytics.invoked=!0;analytics.methods=["trackSubmit","trackClick","trackLink","trackForm","pageview","ide
ntify","reset","group","track","ready","alias","debug","page","once","off","on","addSourceMiddleware","addIntegrationMiddle
ware","setAnonymousId","addDestinationMiddleware"];analytics.factory=function(e){return function(){var
t=Array.prototype.slice.call(arguments);t.unshift(e);analytics.push(t);return analytics}};for(var
e=0;e<analytics.methods.length;e++){var
key=analytics.methods[e];analytics[key]=analytics.factory(key)}analytics.load=function(key,e){var
t=document.createElement("script");t.type="text/javascript";t.async=!0;t.src="https://cdn.onetag.com/analytics.js/v1/
" + key + "/analytics.min.js";var
n=document.getElementsByTagName("script")[0];n.parentNode.insertBefore(t,n);analytics._loadOptions=e};analytics.
_writeKey="YOUR_WRITE_KEY";analytics.SNIPPET_VERSION="4.15.2";
 analytics.load("YOUR_WRITE_KEY");
 analytics.page();
 }}();
</script>
```

User identification, example

```
analytics.identify('Onetagvisitorid', {
 name: 'Michael Brown',
 email: 'mbrown@example.com'
});
```

Ad Platform identification, event & parameters, example

```
analytics.track('Article Bookmarked', {
 adplatform: '1|2|3|5|7', //1=facebook, 2=snapchat, 3=GoogleAds, 4=doubleclick, 5=
 title: 'Snow Fall',
 subtitle: 'The Avalanche at Tunnel Creek',
 author: 'John Branch'
});
```

Currently via Google Tag Manager, websites have pixel implementation for Ad platforms. These pixels load JS libraries from third party domains and also use third party cookies to track the users activity on your website. Pixels like Facebook, Google ads, Snapchat, Tik Tok & many other platforms are implemented via Google Tag Manager.

One tag replaces all of these pixels & their JS library via a single OneTag JS library. Onetag also covers all the events that these pixels have implemented in GTM. Onetag also has a flexibility to pass custom data parameters for ad platforms.

What are Ad Platform Tags & their event Tags?

Ad platform pixel has 2 parts
- Base code (firebase on all pages)
- Event code (defined by platform or custom) (fires on specific user action)
  - Standard data parameters
  - Custom data parameters

For pixels, most of the tags are customer HTML type of tags in Google Tag Manager. But for Google Platforms like Google Ads, there exists a specific tag type.

For example, below is Facebook (an Ad platform) pixel

Facebook
https://developers.facebook.com/docs/facebook-pixel/reference#standard-events

Base code :

```
<script>
 !function(f,b,e,v,n,t,s)
 {if(f.fbq)return;n=f.fbq=function(){n.callMethod?
 n.callMethod.apply(n,arguments):n.queue.push(arguments)};
 if(!f._fbq)f._fbq=n;n.push=n;n.loaded=!0;n.version='2.0';
 n.queue=[];t=b.createElement(e);t.async=!0;
 t.src=v;s=b.getElementsByTagName(e)[0];
 s.parentNode.insertBefore(t,s)}(window, document,'script',
 'https://connect.facebook.net/en_US/fbevents.js');
 fbq('init', '{your-pixel-id-goes-here}');
 fbq('track', 'PageView');

</script>
```

Event Code & it parameters

Standard

```
fbq('track', 'Purchase', {currency: "USD", value: 30.00});
```

Custom

```
fbq('trackCustom', 'ShareDiscount', {promotion: 'share_discount_10%'});
```

Google Ads

Base code :
- via Google Ads type of tag

- If custom HTML tag is there then refer below

Google Site global snippet

```
<script async
src="https://www.googletagmanager.com/gtag/js?id=AW-CONVERSION_ID">
</script>
<script>
window.dataLayer = window.dataLayer || [];
function gtag(){dataLayer.push(arguments);}
gtag('js', new Date());
gtag('config', 'AW-CONVERSION_ID');
</script>
```


Event Code
- via Google Ads type of tag
- If custom HTML tag is there then refer below

Custom & Standard events have same code

```
<!-- Event snippet for Example conversion page -->
  <script>
    gtag('event', 'conversion', {'send_to': 'AW-123456789/AbC-D_efG-h12_34-567',
      'value': 1.0,
      'currency': 'USD'
    });
  </script>
```

There are no defined names for events in case of Google Ads but there exists a specific conversion ID for specific events.

Tiktok

https://ads.tiktok.com/help/article?aid=10000357

Base Code :

```
<script>
!function (w, d, t) {
  w.TiktokAnalyticsObject=t;var
ttq=w[t]=w[t]||[];ttq.methods=["page","track","identify","instances","debug","on","off","once","ready","alias","group","enableCo
okie","disableCookie"],ttq.setAndDefer=function(t,e){t[e]=function(){t.push([e].concat(Array.prototype.slice.call(argume
nts,0)))}};for(var i=0;i<ttq.methods.length;i++)ttq.setAndDefer(ttq,ttq.methods[i]);ttq.instance=function(t){for(var
e=ttq._i[t]||[],n=0;n<ttq.methods.length;n++)ttq.setAndDefer(e,ttq.methods[n]);return e},ttq.load=function(e,n){var
i="https://analytics.tiktok.com/i18n/pixel/events.js";ttq._i=ttq._i||{},ttq._i[e]=[],ttq._i[e]._u=i,ttq._t=ttq._t||{},ttq._t[e]=+new
Date,ttq._o=ttq._o||{},ttq._o[e]=n||{};var
o=document.createElement("script");o.type="text/javascript",o.async=!0,o.src=i+"?sdkid="+e+"&lib="+t;var
a=document.getElementsByTagName("script")[0];a.parentNode.insertBefore(o,a)};
  ttq.load('YOUR PIXEL ID WILL BE LOCATED HERE');
  ttq.page();
}(window, document, 'ttq');
</script>
```

Event code :

```
<script>
ttq.identify({
  external_id: '123',
  email: 'foo@bar.com', // we will hash with sha-256
  phone_number: '+12133734253', // we will hash with sha-256
})
ttq.track('AddToCart', {
  content_id: '301',
  quantity: 1,
  price: 8,
  value: 9.2,
  currency: 'USD'
})
</script>
```

Snapchat

https://businesshelp.snapchat.com/s/article/pixel-website-install?language=en_US

Base Code :

```
<!-- Snap Pixel Code -->
<script type='text/javascript'> (function(e,t,n){if(e.snaptr)return;var a=e.snaptr=function()
{a.handleRequest?a.handleRequest.apply(a,arguments):a.queue.push(arguments)}; a.queue=[];var
s='script';r=t.createElement(s);r.async=!0; r.src=n;var u=t.getElementsByTagName(s)[0];
u.parentNode.insertBefore(r,u);})(window,document, 'https://sc-static.net/scevent.min.js'); snaptr('init',
'9fe54988-074c-4ab7-886c-13a8557ada00', { 'user_email': '' }); snaptr('track', 'PAGE_VIEW');
</script>
<!-- End Snap Pixel Code -->
```

Event Code

Custom & Standard events have same code
```
snaptr('track','VIEW_CONTENT');
```

What is GTM ? What is GTM's JSON file?

Google tag manager is a tag management solution for websites. It is a JSON structured container that is loaded on a website if the Website has implemented its snippet with unique GTM container code.

Google tag manager has 4 types of components
- Tags
- Triggers
- Variables
- Built-in variables
- Folders [Ignore]

Tag can use triggers, variables, built-in variables and may be associated with a folder. Each component has a different sub type. Tag can be of a type, Universal Analytics or custom HTML or double click or many others. similarly trigger can be of a type pageview or clicks or link clicks or datalayer event.

There is a container specific JSON file that contains all of these configurations. Within the JSON file these components are different objects like Tags, Triggers etc.
Tag object contains all the tags that are configured within GTM. Each sub object with in Tag object represents a tag & Contains all the tag related information. Similar is the case with triggers object and variables object.

Please find the example of GTM Json in below link
https://drive.google.com/drive/folders/1TmjhvUMdcOY2o1R8G85S3CsX-jEeE7Xu?usp=sharing

Links for Reference

https://www.qa2l.com/products/qa2l-for-web
https://online-metrics.com/google-tag-manager-extensions/

- Replace GTM json with GTM APIs
- Add criteria for identifying ad Platform base code and event code. [Add Table]
- Config file