

DATA & INTEGRATIONS 2021

EXECUTIVE BRIEF SERIES

THE 2^N^D IN A 4-PART SERIES

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The foundation of any great data analytics initiative is the data itself. It needs to be accessible (in near-real time), clean, and correct. An optimal implementation of an association analytics solution, like the Nucleus Data Analytics Platform, will include bringing together data from all relevant systems, documenting the data so it can be understood by your entire team, and enhancing the data to enrich its value and make it easier to use.

SYSTEM STRUCTURE - The Case for a Data Lake

Newer and more modern data analytics solutions are built using Data Lake architecture, which differs from the older data warehouse approach in one critical way - data is stored in a data lake in its original form and doesn't have to be manipulated until it's needed (to generate a chart or graph, for example). This makes the Data Lake architecture extremely flexible and future-proof. Data Warehouses have served the industry well, but always with the shortcoming that they require a preset data structure into which all data must be converted at the time of import into the warehouse. This means that data has to be configured specifically to support the requirements you have today, making it costly and time-consuming to support unpredictable (and inevitable) future requirements.

An example of this future-proofing flexibility: Nucleus was developed specifically to support association business requirements – but in early 2020, with the onset of the COVID-19 virus, Nucleus was used to import, blend, and visualize data about infections, testing, mortality rates and more to try to give associations the best possible insights. Data Lake architecture supported this unexpected use case, which was conceived, implemented, and made available to the member industry at no charge in just 10 days.

THE DATABASE SUPPORTING THE DATA LAKE

It is recommended that the underlying database of a Data Lake be powerful big-data technology such as Hadoop, rather than the SQL technology typically used with low- to mid-market level membership systems that have limited data loads. SQL systems have their strengths – storing and organizing transactional and demographic information. Data analytics solutions, however, are required to store and aggregate massive data sets and deliver output users immediately. Most association analytics initiatives require the collection and aggregation of not only member/constituent data from the AMS/CRM, but also a range of other systems. The amount of data available to help you better understand member interests is vast and increasing rapidly. Performance is a central consideration in all of this, and a Data Lake handles this with ease.

BLENDING DATA: The Secret Sauce of Data Analytics

“At the average association, only 20% of member data is stored in the membership system (AMS/CRM).”

This statistic shocks most member-industry professionals, but the situation has evolved for all the right reasons – associations rely on multiple software solutions to serve their members, including AMS/CRM systems, an email marketing tool, one or more websites, an online community, a learning management system, an event management system, and more. All of these systems collect data that indicates member interests and helps identify evolving membership clusters. Much of the impact of an analytics initiative derives from bringing all of this data together for analysis. Knowing which members viewed which webpage and read which email can be extremely powerful and overlaying this information with all the other member data your systems contain (event participation, educational activity, demographics, membership data, online community participation, volunteering, advocacy, donations, etc.) opens up new worlds of understanding for both association staff and leadership.

A fascinating 2019 [study](#) showed that at the typical large-to-mid-sized association, only 20% of member data is stored in the AMS/CRM. It is exceedingly difficult to understand any constituency studying only 20% of their behavior and characteristics, and this percentage is decreasing over time.

Associations, quite appropriately, use a variety of systems to properly serve their members, but a dramatic side effect of this has been the creation of new data silos. Again, this data explosion challenge is not limited to associations – companies are choosing whether to harness or ignore all the customer data available to them, and the trends clearly show that those that embrace and use more data enjoy greater success. The Nucleus Data Analytics platform was designed specifically to store and manage an unlimited amount of association data from any and all association systems and blend the data together to allow users to compare segments identified in the membership system against the rich activity gathered in the systems your members interact with daily.

BOTH STRUCTURED AND SEMANTIC DATA ANALYSIS

Data Lake architecture allows organizations to load both structured (numbers) and unstructured (text) data into the system. By applying semantic analysis to the unstructured data, organizations can identify the issues and topics in which their members are showing the most interest. Often this unstructured data comes from community posts or survey responses. Nucleus can also be used with these same types of data to conduct Sentiment Analysis, which provides indications of how members feel about a given topic. For example, Sentiment Analysis of meeting attendees can complement the structured (numeric) responses they might have provided through surveys to create a more nuanced picture of attendee feelings toward the event.

GATHERING DATA - You Should Have No Limits

PREBUILT INTEGRATIONS

Any data analytics solution that is tailored for the member industry should include integrations to the array of membership systems, email marketing, event application, learning management solutions, and other systems used by membership-based organizations. The integrations will ideally access data through an application programming interface (API) for continuous updating of data in near real-time. Equally vital is that these integrations should include maintenance updates so that they continue to accurately transfer the data. Only if an API doesn't exist should the integration pull the data directly from SQL tables or a file spreadsheet file.

DATA IMPORTS

If data only needs to be transferred into a data analytics platform once, then a data import can be used instead of an integration. Data imports tend to be cheaper and faster to build. Before proceeding with a data import initiative, confirm that the data has a matching identifier such as a customer or member number, or the next best option is an email address. Most data imports will accept files in CSV, Excel, and Google Sheets.

DATA TRANSFORMATIONS

When data is imported, it can also be transformed – bad data can be fixed, existing data elements can be combined and new data elements can be created (i.e. a calculated metric). The goal of combining and creating new elements is often to simplify and enrich data for users – for example, membership is often defined through a combination of several elements: member type, status, payment, grace period, etc. When bringing the data into a data analytics solution, a new field can be added that applies whatever logic is appropriate for that particular data element and presents the data to the user with crystal clarity: Member = Yes/No. This is one of the advantages of using an analytics system designed for associations, rather than a generic one.

DATA CLEANUP

Many associations conduct a data clean-up effort either before or in conjunction with implementing a data analytics solution. These two endeavors work very well together, because a data analytics tool can be extremely helpful in identifying bad or missing data. For example, a good practice is to always list a “not specified” category when displaying a set of data. First, this ensures all records are accounted for in the filtered data set and it alerts the user which records are missing a categorization. Some organizations find this useful in identifying missing data, and if data is incorrect, the data analytics solution will provide you a map of what to fix. If data cannot be fixed at the source, the data analytics import language, often referred to as Extract, Transform, Load (ETL), can be used to correct data deficiencies. This approach should be used sparingly, however, and be well documented.

EXPLORING DATA - You Should have Many Options

ASSOCIATION-SPECIFIC VISUALIZATIONS “OUT OF THE BOX”

There is no sense re-inventing the wheel. Choosing a data analytics solution like Nucleus that comes pre-loaded with a full complement of visualizations (charts/graphs) tailored to association needs provides an enormously valuable starting point.

The Nucleus array of pre-built visualizations were designed to meet all standard association needs – they cover areas such as Membership, Marketing, Events, Learning & Certification, and more. New visualizations are added regularly at the suggestion of your industry peers, so you benefit from new forms of insight as they emerge. Most organizations find that these visualizations, all of which offer user-friendly self-service data exploration and filtering capabilities, meet nearly all of their needs – and this is just the starting point.

When your association peers uncover a new metric, a new way of looking at data, we incorporate it into Nucleus and make it available to all – in 2021, for example, an array of new membership metrics has been added and is in use at client organizations.

DIY – SELF SERVICE

For any analytic needs not fully met by pre-built visualizations, we recommend selecting a solution that also has a self-service visualization builder so users throughout your organization can do it for themselves (DIY). This capability should allow the user to access all of the data that is provided to the pre-built integrations but now see it in new ways.

The key is finding a modern solution that provides the ability to create and configure new visualizations in the product but remains on the product upgrade path. In other words, these configurations shouldn't be customizations. As with all software solutions, it is critical to remain on a company's upgrade path to avoid future cost and delays, maximizing the long-term investment in a solution.

ACCESS THE DATA FROM YOUR FAVORITE TOOLS

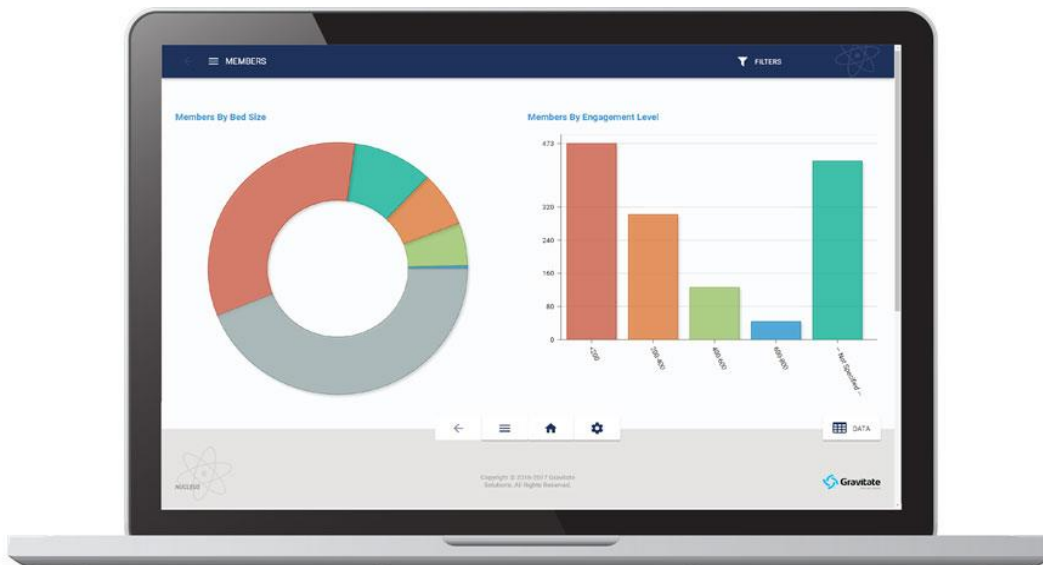
Modern software solutions come with Application Programming Interfaces (APIs) that can be integrated to other applications, allowing other applications to securely access data in the solution. We recommend selecting a data analytics platform that has a comprehensive and open API. Be sure that the API can access all the data in the Data Lake, and it does not restrict the user to only a subset of the data. Like the self-service visualization builder, it is important that users can access and explore any data they need - and through a powerful API, the access can be safely controlled, and the appropriate data can be served up to the user.

THE RELATIONSHIP TO TABLEAU AND POWER BI

For associations with data analysts already on staff using products such as Tableau and PowerBI, a solution such as Nucleus is an ideal augmentation – first, both Tableau and Power BI benefit tremendously from connecting directly to a Data Lake containing all your member data. At present, very few organizations have a central data repository and these powerful analytics tools are using incomplete data. Second, those employees on your staff who have the skills and training required to use Tableau or Power BI benefit tremendously from being freed from the need to generate reports for colleagues. Because a solution like Nucleus is used throughout the organization, the overwhelming majority of reporting needs are met automatically and the power analysts on your teams can focus on custom, esoteric analysis.

SQL ACCESS

While modern data analytics solutions generally mask the complexities of the database and most are built on big-data (no SQL) databases, it is not uncommon for an organization to have deep SQL experience in their IT department. Some modern data analytics solutions like Nucleus offer a SQL interface to the data that can be valuable for skilled resources who want to do special exploration of the data.





CONCLUSION

To organizations such as associations that have ongoing relationships with their customers/members, the following remarkable statement often holds true:

information about a transaction may be more important than the transaction itself.

Using every possible member transaction, every possible member touchpoint to identify changes as quickly as possible is a goal that is both more obviously beneficial and easily attainable than ever before.

We encourage you to empower your leadership, staff, components, members and board with the insights they need to make decisions with confidence.

CHECKLIST: DATA AND INTEGRATION BEST PRACTICES WHEN CONSIDERING A DATA ANALYTICS PLATFORM IN 2021:

- The solution is built on a modern Data Lake architecture so that it will successfully support both your requirements today and in the future.
- The solution includes pre-built integrations and connectors so you can minimize time to
- The solution can be tailored and configured by your team so you can be self-sufficient.
- The solution has a powerful API so it can be integrated to anything.

Next Step: schedule a conversation with a Nucleus subject matter expert to discuss analytics at your organization specifically. A 30-minute review of the systems in use at your organization and your analytics needs will provide useful insights into what's possible.

Please schedule this [here](#).

The rest of the Executive Brief series is included in the [Analytics for Associations Success Kit](#).