FAQ

What is Flow's brief history?

Flow Immersive was founded in 2016 by Jason Marsh as CEO and technical founder in order to bring symbolic information into Virtual Reality environments. Jarvis, an AI from the Iron Man movies, was a key early inspiration. Over time, it was clear that data visualization and storytelling were core customer needs, and that cross-device support was vital to extending the relevance of the product and providing a smooth on-ramp to the metaverse.

Flow has focused on data communication as a primary use case, but this does not exclude data exploration use cases. Flow has a long list of large organizations, small businesses, and educational organizations using the Flow Editor as a self-serve tool. Flow has gained notoriety online with some 30 million views of AR videos produced with Flow and captured on phones.

Recently, Flow has been incorporating ChatGPT and other AI technologies into an alpha implementation. We are looking for partners to codify use cases and fully realize the original vision: mastery and control of our information and the efficient sharing of 3D mental models to help solve the largest of challenges. Our core values acknowledge that mankind and its organizations have problems to solve, and we hope that better-shared data understanding can efficiently move humanity forward.

Describe Flow's management team

Jason Marsh, CEO and Head of Engineering. The primary architect of Flow. Many years of experience in many aspects of UI design and implementation. 30 years of experience in Enterprise software, 8+ years of experience in data visualization in 3D, AR, MR, VR, etc.

Michael DiBenigno, Head of Business. Prior Strategy & Analytics Manager at Deloitte Consulting. Six years of experience with data visualization in 3D, AR, MR, VR. Author of many prominent Featured Flows, AR Videos, and many customer Flows, with 200K+ followers on TikTok and approximately 30 million views.

Bill Morton, Head of Services (implementation, education, support). Many years in building and managing customer-facing organizations. Very active in project management, Flow design, training, and support of Flow customers. Very active in reviewing customer Flows, engaging in brainstorming with customers, providing advice, and advocating for product enhancement requests received from customers.

Other FLOW personnel include 10 full-time engineers.

Highlight any unique selling points or differentiators that sets Flow apart from competitors.

Flow enhances the way we communicate with data, with a vision that goes beyond merely improving data analysis capabilities. As a data storytelling tool first, with analysis as a secondary use case, we can provide the drama and brand quality ideal for customer-facing innovation centers. A no-code authoring environment enables rapid iteration, a full collaboration system with avatars supports in-person and remote users, and Flow operates on any device including mobile, computer, large-screen projection, and virtual/augmented reality headsets as an optimal experience.

Many media and production shops can produce beautiful demos, and game shops can produce beautiful limited applications. Flow is the only Enterprise-class platform designed exactly for this use case in innovation spaces, where a stunning experience of data is operationalized and satisfies the needs of day-after-day operations. A beautiful demo that does not understand the considerations of enterprise workflows will be useless after the first week. A sophisticated no-code editor is needed for EY staff to rework use cases in minutes without complicated re-compile processes, and therefore Flow is live on the web with a single button push and no compile time. Flow has dozens of person-years of engineering to produce exactly this tooling, created and tuned over 7 years.

An example of the Flow platform's global relevance and impact is usage at the United Nations General Assembly, where Flow was utilized two years consecutively to deliver data stories related to UN programs around the world.

Adding further to the power of Flow Immersive is the recent integration of Flow’s visual AI assistant.

In essence, Flow combines the power of 3D data visualization, artificial intelligence, and collaborative tools to not only create compelling data stories but to also facilitate in-depth exploration and collaboration between users.

What marketing and communication services does Flow offer?

Flow is not a design agency but is a technology provider with implementation services. We can work closely with marketing, branding, market research, and event planning organizations. We are focused on the experience of the data and the story. Flow has been used to deliver major presentations at events such as the World Economic Forum, Computer Electronics Show (CES), UN General Assembly, and in BlackRock private events. Our Flows, in video form, have garnered some 30 million views on popular social media channels.

What types of immersive experiences does Flow specialize in, such as virtual reality (VR), augmented reality (AR),

mixed reality (MR), virtual and physical interactive installations, projection mapping, etc.?

We specialize in creating software platforms, tools, and content for immersive experiences that are interoperable across all devices simultaneously and optimized for individual devices. We do this by being a web-based platform (with the ability to be hosted on-prem), that operates in the browser. We will soon release a native Oculus App and Magic Leap App that further enhances avatar capabilities.

What is Flow's approach to creating immersive experiences, including any methodologies or frameworks?

Our methodologies include User-Centered Design, Rapid Prototyping and Iterative Design, Narrative Design, Spatial Design, and Accessibility and Inclusion.

User-Centered Design (UCD) – We always start with the audience; their prior knowledge level of the content being presented, comfort with technology, and expectations about the experience. The audience should always feel like the hero, with a sense of mastery and control. While Flow experiences can be configured to also be self-guided using text, audio narration, Avatar Stories, and/or an AI assistant, many immersive, augmented reality experiences are designed for multiuser in-person meetings.

Rapid Prototyping and Iterative Design – Rather than a waterfall approach, we build Flow data visualizations with our proprietary no-code editor software. Flow staff and our network of certified Flow designers can build 3d data visualizations and process the data to quickly iterate on the design and creation of the data visualizations and narratives.

Narrative Design – Most Flows are also stories that contain a beginning, middle and end, tying together emotional stories with the logic of data visualizations. We find that the data is the anchor, and the narrative story on top drives the emotional response. We guide our presenters through combining these forces, and keeping the forces in consideration when building Flow data visualizations and data stories. Each use case may require a balance between narrative design and participant control, and the Flow platform excels in both scenarios.

Spatial Design – AR content must be designed in a way that leverages the available space for standing or sitting experiences, and accommodates both in-person and remote participants, often from a variety of AR/VR, mobile, large screen, or computer devices simultaneously. A limited field-of-view must be balanced with the excitement of unlimited wrap-around content in the 3D space. Collaboration AR Flows have been presented live at CES, have been used at busy trade shows, and in conference rooms.

Accessibility and Inclusion – We ensure our designs follow color guidelines that work with color blindness. Additionally, we support any device, and have found that some viewers prefer using a large iPad for an AR experience instead of a headset. This interoperability ensures people can join an experience and feel comfortable.

What is your approach to data acquisition and integration, including the methodologies, tools, and frameworks you use?

Flow provides multiple mechanisms of data acquisition and integration methodologies to achieve data ingestion. Data can be imported using CSV files and Google Sheets, and the Flow integration API enables data import from additional data sources such as Python, Tableau, Power BI, and Salesforce. Data sources that can be wired into the Flow API include a variety of client systems, including ERP, EPM, CRM, POS, supply chain, sales and operations, databases/data warehouses/data lakes, logistics, and more. The published Flow API enables the push of data using Python scripts which helps customer data remain private and secure: only the necessary data is made available to the Flow visualizations. Our customers have found that a push API is much more compliant with data security guidelines, and keeps data control where it belongs: internal to your organization, not ours.

For data storage, Flow encrypts and stores the data files in a CSV format.

In terms of data processing and transformation, Flow provides fairly simple tools and features to perform data transformations within Flow. Over time, Flow will continue to add data transformation and analysis functionality, but we do not see Flow as a replacement for well-established tools such as Excel, Tableau, and Power BI.

What are your experience and capabilities with respect to advanced analytics; predictive and prescriptive analytics and AI, (including machine learning, deep learning, and generative AI)?

As a data presentation tool, we have not been focused on advanced analytics compared to other existing deep frameworks. Now that LLM AI integration is proceeding, there will be new capabilities to respond to more advanced analytical capabilities, particularly those that non-expert users would expect when speaking with their data. We continue to expand the mechanisms to get data into formats to visualize the data quickly, but expect that building machine learning models is best done in other expert data science tools.

What is your approach to data visualization, including the methodologies, tools, and frameworks you use?

Flow focuses on effective communication of data stories using visually immersive 3D experiences in virtual reality (VR) and augmented reality (AR) as a peak experience, without requiring headsets for all users. We feel AR is the most appropriate for in-person collaborative meetings with Flow, which we support through a quick calibration process for all users to see the data floating between them aligned consistently for each user.

We support Meta Quest 2, Meta Quest Pro, Magic Leap 2, and other headsets that have a WebXR implementation. We have a Unity Flow player releasing soon for native performance on Quest devices, with more to follow. The underlying player framework is ThreeJS, D3js, and VueJS. Our backend is based on Node JS. Our open-source frameworks at this time include LangChain and we've been focused initially on ChatGPT, but we will support most LLMs as requested by customers.

Explain how you ensure the accuracy and reliability of visual representations.

Within the authoring tool, there are parameters to allow authors to tweak visualizations such that audience manipulation of the data can be minimized. We give the author the control they need to present data honestly.

Provide details on how Flow handles complex data sets, integrates and aligns multiple large data sets to solve complex problems, and presents them in an easily understandable manner.

For Flow to function as an end-user communication tool, we expect data sets to be reasonably sized to fit within memory and the rendering capabilities of phones, XR devices, and laptops. Massive datasets require filtering and data reduction techniques to limit the total number of visible dots to approximately 100,000.

With our push Flow Dataset API, the filtering of large datasets can be performed on a customer server and pushed to Flow for visualization. An integration can be built to enable user interactions to control the backend data filtering to reduce the dataset, and once in memory, the client has sophisticated filtering and sorting capabilities for the user to gain a sense of mastery and control.

3D data visualization, when done right, can reduce issues of visual crowding typical of flat screens so that users can experience more of the data first-hand instead of through over-simplified bar charts. This enables the user to gain greater feelings of credibility and trust in the data.

Complexity is reduced by showing the data as concretely as possible: a dot becomes a person, an event, or a place in time, instead of an abstract box. These dots can then move from perspective to perspective, helping the user to build a single mental model instead of needing to cope with disparate, spatially unrelated bar charts in a deck.

Describe Flow's ability to create interactive visualizations that allow users to explore the data.

Flows almost always contain data visualizations that allow users to explore the data. Individual data records are represented by dots that are displayed in a wide variety of charts. Flow supports the use of popups that can be configured to show the data exposed in user queries. The popups

can be set up to appear anywhere in the 3D space, and a variety of formatting options can be used when displaying the popups.

The dots can be selected, highlighting or isolating groups based on similar data characteristics. Legends can be configured using the same colors used for the dots, and legends can be used to isolate desired data records by clicking the appropriate legend item. Legends provide various functionality, including multi-select, deselection of appropriate records, modification of color to emphasize the highlighting of records, and other functionality.

These areas of functionality are defined in simple no-code options within the Flow Editor authoring tool.

Does Flow provide digital twin technology products and services?

If digital twinning means working with the data coming from real-world devices, then that is supported. An extension we would like to make is being able to see the data in-situ, transposed onto machinery or other real-world objects, which should be possible by integrating 3rd party libraries. Flow has not been as focused on 3D models which twin the real world.

Does Flow offer any cloud-based solutions?

Flow is available as a Software-as-a-Service (SaaS) offering available worldwide on servers operated by Amazon Web Services (AWS). Licensed users can use the Flow Editor to construct whatever Flow presentations that are appropriate for their use cases. Flow can be installed on private cloud instances on Microsoft Azure servers or on-prem UNIX machines for an additional fee.

What additional technology-related services your company offer, such as consulting, implementation, customization, and technical support?

FLOW’s implementation consulting has been used by many customers, and typically Flow customers choose to purchase appropriate implementation services either directly from FLOW or from FLOW’s list of Certified Flow Designers (CFDs). If desired, customers have the tools to develop their own expertise for using the Flow Editor, and FLOW provides training courses and hundreds of educational assets (videos, usage guides, online help, etc.) to assist customers in building expertise in using the Flow Editor. Technical Support is provided via email, online meetings when appropriate, and various documents and videos that describe Flow functionality, including construction of AR videos. Flow is available to provide data importation and integration support, integration with ChatGPT/AI, and customization services.

Describe Flow's ability to customize visualizations to meet specific requirements and branding guidelines.

The Flow Editor provides massive customization options for generating Flow data story presentations that meet customer project and branding requirements. The Flow Featured Flows page at https://a.flow.gl provides many examples of customization options. Flow's extensive options for use of images, color, fonts, audio segments, etc. enable branding guidelines to be fully achieved. We can also provide custom engineering to extend the framework.

What are Flow's scalability capabilities in handling large volumes of data and increased visualization complexity?

For Flow to function as an end-user communication tool, it expects data sets to fit within memory and the rendering capabilities of phones and XR devices. Massive datasets require filtering and data reduction techniques to limit the total number of visible dots to approximately 100,000, which is plenty to provide drama and wonder.

With our push Dataset API, the filtering of large datasets can be performed on a server and pushed to Flow for visualization. An integration can be built to enable user interactions to control the backend data filtering to reduce the dataset, and once in memory, the client has sophisticated filtering and sorting capabilities for the user to gain a sense of mastery and control.

Complexity is reduced by showing the data as concretely as possible: a dot becomes a person, an event, or a place in time, instead of an abstract box. These dots can then move from perspective to perspective, helping the user to build a single mental model instead of disparate, spatially unrelated bar charts in a deck.

For flexibility, every implementation must define stakeholder requirements early, including a clear audience definition. The platform delivers an incredible amount of flexibility with regard to supported hardware devices, single and multiuser environments, online or app-based, exploratory vs. story-based, and more. The Flow Editor supports any conceivable color scheme, going beyond any other dataviz tool. The interaction design is extremely flexible. All fonts and languages supported by Google Fonts are available, as well as font uploads. Custom maps are supported through TopoJSON files.

Outline any features or functionalities that differentiate your data visualization solutions from competitors.

The Flow platform is designed to provide a massive amount of control on how to arrange data points in 3D space based on the underlying data. These capabilities are controlled via the parameters in the Flow Editor and provide fine-grained control. Connection lines, labels, area charts, and interactive legends are all available to build up a massive number of possible chart types. To increase ease of use, we provide combinations of these elements into Templates so that a user can select a template, replace their data, and get to a complex visual with very little time or expertise needed.

To facilitate data stories, visualizations are arranged over a series of steps. Steps in the Flow editor are equivalent to slides in a PowerPoint deck, with elegant animations moving the data into each perspective.

Flow utilizes a fully interactive multiuser collaboration engine with simple avatars to provide powerful experiences, with the pinnacle being a co-located AR meeting. All users see the same content and interactions in the same place in the room. Perhaps they are joined with other users on phones or iPads, or remotely in VR headsets represented locally with an avatar.

Our alpha AI integration, where you can speak to your data, is unlike anything on the market, including products from the largest companies working on AR and AI. We look forward to showing you demos or providing video links.

Describe Flow's data security standards and procedures relating to data protection relating to sensitive or confidential information.

Flow has strict data security standards and procedures in place to protect sensitive and confidential information. The platform does not permit the entry of Personally Identifiable Information (PII) to ensure that such data is not exposed in Flows. Additionally, all customer data is stored in a separate and isolated environment, ensuring logical data separation between different clients. Authentication is secure and access to customer accounts is limited to authorized personnel. Flow also offers the option of on-prem or private cloud servers for added security. Complete Policies and Procedure documentation is available upon request.

Specify the software, hardware, and development platforms you utilize.

The Flow platform is primarily web-based, using WebXR to deliver VR, AR, and MR experiences. A “Flow”, or data presentation, is a document containing all necessary information and data connections to perform a fully interactive experience. The Flow is created in the web-based Flow Editor and displayed with the Flow Display module, and soon will also be displayed via a Unity app for Oculus with other platforms being released over time.

The Flow presentation is hosted in the cloud where security and authorization are maintained.

The XR hardware platforms supported include Meta Quest 2, Meta Quest Pro, Microsoft HoloLens 2 (not recommended), Magic Leap 2, and any others with a WebXR implementation. The hosting environment used is AWS for cloud services, but Flow can also be installed on Microsoft Azure or on-prem UNIX servers.

What 3rd parties does Flow work with?

FLOW's working with 3rd parties falls into several categories. (1) Customer project personnel invite FLOW personnel to participate in various aspects of constructing data visualizations and data stories. In this context, FLOW personnel work directly with customer personnel who are chartered to deliver solutions that include data visualizations and data stories. (2) FLOW is sometimes asked to provide special assistance in evaluating data sources, generating special presentation artifacts such as customized maps, integrating with specialized data sources, integrating with AI functionalities, etc. In these situations, FLOW is usually able to handle the request via its software engineering expertise. There have been a few situations, such as interfacing with specialty electron microscopy devices, where FLOW has chosen to procure assistance from an outside source for handling a special request related to content and data engineering. (3) FLOW has worked diligently to generate a network of Certified Flow Designers (CFSs). CFDs can be contracted through FLOW, or customers can contract directly with CFDs if they choose to do so.

Explain how you ensure effective communication, feedback, and decision-making throughout the project lifecycle.

On customer projects, FLOW always uses statements of work (SOWs) in which the roles to be provided by FLOW personnel (or CFDs), deliverables, and timelines are clearly stated. FLOW project management is always in close contact with customer personnel via email and online meetings. FLOW deliverables are always provided using a rapid development and iteration methodology. FLOW customers are asked to review interim releases of FLOW deliverables, and attentive project management, excellent version control, and a culture of providing rapid iterations while maintaining high quality have proven to result in the delivery of timely and successful project contributions by FLOW personnel.

Describe the whole architecture of Analytics, i.e. how are ingestion points, transformations, data storage, data processing handled?

Data is ingested into Flow in a flat-file format such as CSV files or Google Sheets. Additionally, data can be imported into Flow from various data sources using Flow's published integration API. Python libraries provide an easy mechanism to authenticate and move exactly the relevant data into Flow. Alterix and Power BI integrations are available as well. Data can be pushed to Flow from Data Lakes through the Flow API. Data files are stored within Flow in an encrypted CSV format. Various data transformations can be performed within Flow. Data can be exported from Flow, but the usual use case entails data being imported to Flow so that the Flow software can generate interesting and compelling visualizations and data stories.

Predictive analytics

Flow does not offer predictive analytics algorithms, but Flow has been used to generate data story presentations that contain predictive analytics. Flow can visualize predictive analytics but relies on

other software to compute the predictive analytics.

Anomaly/outlier detection

Flow provides many ways of identifying anomalies and outliers in the data. The anomalies and outliers are presented visually. As a visualization tool, we focus on the end experience and expect serious data scientist users to continue to use the extensive tools in their existing quiver, and Flow is the tool that provides a full 3D environment to dramatically display the outliers within the dataset.

Leverages AI/ML technology to drive insights

Flow has included AI functionality through the integration of large language models such as ChatGPT into the Flow experience so that users will be able to query the data with a natural language interface and discuss the context provided by expert documents. The experience of natural language communication resulting in dramatic 3D visuals within augmented reality feels like science fiction coming to life.

Calculation of deltas or changes

Flow's 3D line charts of categorized time-based datasets enable the user's eye to immediately see deltas and changes. Once seen, the user can drill down to isolate categories or ranges to gain greater insights. Algorithms to extract the deltas and outlines before presenting them to the user are left to the data scientist's quiver of other tools.

Word clouds

Flow has been used to generate word clouds as visualization objects. Because labels can be associated with any data point, for example, it can be dramatic to drill into a social media dataset and see a word cloud summarizing a topic animate out from a selected point.

Data superimposed on a map or globe

Flow has many ways of superimposing data on a variety of maps, including globes or a variety of map projections. Flow provides many standard maps, and customers can create their own maps using TopoJSON files.

Sticky notes or other forms of annotation

Flow does not have sticky-note or annotation functionality at this time.

Collaborative interaction with visuals or dashboards

Flow's Multiuser Collaborative Meetings functionality provides the ability of multiple persons to enter into a meeting environment. With laser pointers and shared real-time interactivity, even non-

experts can, with a laser pointer, indicate interesting aspects of the data and ask about outliers without knowing technical jargon. "Tell me about THIS" becomes a precise, well-understood question when accompanied with 3D data and interactivity.

Non-VR users can join a collaborative session

Yes, Flow supports the use of collaborative sessions in which users may enter collaborative sessions from their screens or phones using browsers, or within headsets.

Audio functions for muting (all/self), Spatial audio

Flow multiuser meetings have optional simultaneous audio streaming for all participants, and each or all participants can be muted/unmuted by the host, and self-muted.

Emojis for expressing feelings

There are no chat-based interactions, so no emoji support (:-|)

Integration of 3rd party conference call platforms

Often, multiuser Flow meetings are the visual element of a conferencing platform, where the audio remains with the Zoom call. However there is no explicit support for other conferencing systems within Flow.

Can turn on/off collaborative features

Collaborative interactions can be enabled or disabled for each user independently.

Other differentiated offerings not mentioned above:

In many ways, Flow feels like many SciFi movies: seeing your data floating in front of you, and interacting collaboratively. We might argue that much more innovation has gone into making a platform that is usable for an enterprise to use on a daily basis and fits into an enterprise workflow. Dramatic and cool are meaningless if you can't apply them quickly and effectively every day.

Limits on file size or formats

By default, the maximum file size supported by Flow is 10 MB, and the maximum number of data points displayed in a single visualization is 80,000 records. These limitations are merely designed to keep within the performance limitations of typical headsets and mobile phones and expectations of dataset download times over the Internet. Customized applications that target explicit playback devices can exceed these limitations.

Ability to move through a virtual environment (VE)*

Flow users can move through virtual environments using controller 'fly' navigation, as well as place content in specific locations with the user's real environment when using augmented reality or mixed reality.

Avatars that are viewable to other users in VE*

Flow has simple Avatars for web users in meetings, and our upcoming Unity implementation uses Meta Avatars within meetings.

Customizable avatars*

All web avatars merely denote a user in place and orientation, and the Meta Avatars in our Unity implementation rely on the user's avatar definition within their Meta account.

Supports Meta avatars or other 3rd party avatars

We support Meta Avatars within our upcoming Unity application.

Other differentiated offerings not mentioned above:

Multiuser co-presence in augmented/mixed reality is an exciting use case, and we have developed simple, reliable content alignment for multiple users in the same room, whether in headset or on phones.

Supported devices

Flow provides support for the following headsets: Meta Quest 2, Meta Quest Pro, Microsoft HoloLens 2, Magic Leap 2, Pico, and any others that have a WebXR implementation. We expect to extend this as the Unity implementation is complete.

Compatibility with WebXR standards (i.e. browser compatibility)

Flow is implemented in browsers (including headset browsers) using WebXR.

Other hardware/accessory requirements

None

Desktop version compatibility

Flow is fully enabled for both PC and Mac users using all modern browsers.

Native browser support (Chrome/Edge/Firefox/Safari)

All modern browsers are supported, including Chrome/Edge/Firefox/Safari.

Overall solution architecture and Deployment Architecture

Flow is implemented in a robust multi-level architecture. AWS is our cloud provider. All systems are implemented with load balancing and developed with CI/CD to enable rapid scaling of resources and on-prem installations. For more detailed information, please refer to document #14.1a.

Frequency of the Release Cycle

Flow provides new major releases on approximately a 6-month cycle. Minor releases are provided on a frequent cycle, often multiple upgrades per month. The frequency of minor releases is dependent upon customer demand. All releases are provided with full backward compatibility and very infrequently require any planned system downtime.

Product uptime/downtime SLAs

Flow's availability has historically been greater than 99.9% of the time on a 24x7 basis.

Audit feature for or notice of product changes

Flow provides release notes and notifications when product changes are released. The release notes provide information regarding the product modifications.

Archiving of data or product state for retrieval

Flow does not have a formal program for archiving customer data for future retrieval, but Flow Immersive is willing to discuss needs in this area.

Backup and restore mechanisms

All data is backed up daily and maintained for 30 days.

Multifactor authentication (MFA)

At this time Flow does not offer MFA, but it is on the product roadmap.

Meets rigorous security standards (please specify)

Flow meets rigorous security standards, due to Flow's own processes and AWS being Flow's hosting provider. Flow has passed massive security audits by well-known F500 companies.

Disabling “gameplay” screenshots and exports

Because Flow is delivered via the browser, it would be impossible to disable screenshots.

Features for GDPR compliance (e.g., PII masking)

By policy, Flow does not want PII entered into the Flow platform on our multi-tenant cloud. We are compliant with GDPR. Amazon Web Services is GDPR compliant.

Enabling session timeouts

Flow sessions currently timeout after 7 days.

Accessibility features implemented in the UI

As a highly visual product requiring visual faculties to experience Virtual Reality, it would be very difficult to enable accessibility.

Sit and stand modes

Both stationary and ambulatory VR/AR are supported and expected.

Ability to use a hand controller (one or both) or hands to control menus, other visualizations, or avatar movement in the virtual environment

Hand controllers within AR/VR are the method to interact with the environment.

Ability to view real-world time

No real-world clock is visible within the Flow environment at this time. Please let us know if this is of interest.

Product accessibility to all geographic regions

Flow is accessible over the Internet in all geographic regions. Performance in China using AWS servers appears to be fine, and no blocking has been observed.

What is the commitment to sustainability?

As a company, Flow Immersive is very committed to sustainability, and this core value is an important component of our value system. We hope that if we can help humans communicate data more effectively with data stories, perhaps we can help humanity solve some of its great challenges.

What can be branded in the UI? Describe the steps to reconfigure UI to enterprise branding?

Flow offers white-label branding when required by customers if the customer relationship meets certain financial minimums. Flow expects significant amounts of product usage to be contemplated for white-label implementations of Flow.

What is the level of customization in UI that can be made?

Flow data story presentations are infinitely customizable by users of Flow. The UI used in the Flow Editor to generate Flows is not customizable at this time.

Describe the customization capabilities for the solution and describe how these customizations are delivered. How are these configurations carried over to upgraded versions of the base product?

The Flow Editor can be used to generate infinite numbers of customized solutions that can be viewed on 2D screens, on phones, and in a variety of VR headsets. Customizations of the authoring environment are not available. Data story presentations and dashboards (the result of authoring activities) are always backward compatible with prior release versions of the Flow software. Flow Immersive is always looking for ways to provide additional features and ways to make the authoring environment more user-friendly and flexible.

Do you offer any Desktop Edition of your Platform? If yes then provide details regarding the same.

The Flow Editor and Flow display can be installed onto Windows computers as a PWA. Functionality is identical to running within the Browser.

Does the Platform allow features of social networking (Like, Comments, etc)?

Flow is not its own social media environment other than the ability for Flows to be published for public discovery, without comment or like functionality. Flow AR Videos are commonly posted to a variety of social media platforms, and some postings have achieved numbers of views in the multi-millions.

Does the Platform require Master data to be stored locally?

At this time, all data processed within Flow is stored on Flow servers. We could offer consumption of data exposed within enterprise systems and customized integrations are available as part of an enterprise engagement. Local storage is not stored locally on user devices, but can be uploaded from user devices for use in Flow.

Can the platform be scaled on demand?

Flow is being provided on AWS with load balancing and uses massive scalability features provided by AWS. Flow's architecture has been designed for massive scalability. CI/CD is implemented for rapidly scaling up server resources. AWS alerting is used to when server performance drops below thresholds. We monitor CPU utilization as our primary metric of health.

Are there any information collected without a user’s explicit knowledge and/or consent?

No, Flow does not collect information without the user's knowledge and consent, and consent is required to use the system. We have performance monitoring including usage data to improve the system, and it is never and never will be shared outside of Flow.

How does the system protect sensitive config, data at rest? Can it be applied to custom fields, tables?

All data within Flow is stored in an encrypted state, both at rest and in transit. Individual fields are not encrypted beyond overall file encryption.

Is the Personally Identifiable Information(PII) encrypted?

By policy, Flow does not license the entry of PII into the Flow application. Our position is that PII should never appear in Flows.

What steps are taken to isolate individual client-related environment, data?

All Flow customers share a common processing environment with logical data separation. Data within a customer's accounts is not available to other customers. Authentication is secure and is isolated to access only the customer's accounts. On-prem or private cloud servers are available.

Describe the process to automate new user account creation?

Flow supports the entry of new user accounts via a well-defined new user account creation process. Flow is happy to discuss the details of validating new users to be synchronized with other user creation activities. We have in development a version of our admin functionality to be available for customers to manage their own organization's user accounts.

How does API authentication work?

At this time API authentication is performed via a userid and password, which returns a token for subsequent calls.

What percentage of business and administrative functionality can be executed through API's/services/messages?

The Dataset API is the only API at this time. No business or administrative functionality is accessible through APIs.

What types of near real-time integrations does the application support for messaging (i.e., data I/O as opposed to batch)?

Flow has first been developed with the goal of data story presentations, where live, continuous data feeds are not a requirement. We have designed the client-side data manager to update real-time datasets, but have not built real-time streaming data ingestion capabilities, such as for IOT monitoring data. As part of an enterprise engagement, we would love to extend this functionality to real-time data streaming within the platform.

Does the Platform support Batch-based integration?

The Dataset API expects a single dataset per call. Because of the negative performance implications of very large datasets within phones and headsets, we don't expect huge datasets to be sent to the client.

Can the application provide delta, daily, data changes since the last export?

No. Flow is not a data management and processing application with data exports, so this question does not apply. We focus on the data presentation layer, not data management.

What is the high-level architecture of the system?

Think of Flows like documents with links to source datasets and other media files.

The documents are created in the no-code web-based Flow Editor, where links to datasets are created, and all aspects of the data visualization is described, including interactions, media, steps, etc.

These documents are performed within a 3D environment, either using browser-based WebXR or Unity-based applications.

A cloud server farm (on AWS) serves up the web application, the flows, the datasets, as well as realtime multiuser services.

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