A New Approach to Managing Multiple Analytics and BI Platforms

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Content

Management summary

Today, reports and dashboards must serve ever-increasing requirements for information supply – more decision-makers in more departments analyze more data from more sources.

A few years ago, mostly large companies suffered from highly fragmented analytics and BI front ends and now most mid-sized companies struggle to present critical information to users in a single environment too. Despite significant advances in tools, the ideal of having a single, undisputed analytics and BI solution that covers the needs of all users is a distant dream for many companies. A single point of access remains elusive for many despite significant efforts, as new tools are introduced faster than old ones are discarded.

Multiple forces drive and will continue to drive the fragmentation of analytics and front ends:

- A growing scope of requirements must be covered

- Greater demands from increasingly data literate users

- Use of self-service and data discovery tools

- Low barriers for new tools through cloud deployment

- Inheriting tools from mergers and acquisitions

New challenges are introduced when deploying multiple analytics and BI front ends. Fragmented front ends are far from optimal, not only for the staff maintaining them, but also for the users. They reduce the value that an organization can derive from data and BI by curbing usage and trust. Costs increase when content is implemented and maintained redundantly, and sharing requires significant manual effort. But how can companies counteract the disadvantages caused by fragmented front ends, which are increasingly common today? In a scenario where an enterprise is running multiple analytics and BI platforms, how can users be empowered to get the most out of all these platforms?

Users need a quick and complete overview of the available content. They want to use and leverage all analytics and BI content and reports created in an easy-to-use fashion. IT wants to provide the best user experience (UX) without assigning scarce resources to mundane tasks. analytics gateways provide a single point of access – a one-stop shop – for all analytics and BI content in a consistent interface.

The number one function a unified analytics gateway provides is to serve as the single point of access to all BI content. Beyond basic functions for personalization and extensive search capabilities, users expect modern solutions to recommend useful content to them based on their preferences and usage patterns. An analytics gateway is placed on top of other systems and is built on a lightweight architecture. It is easy to maintain so does not take up scarce IT resources.

Heterogeneous use cases and distinguished functional requirements drive fragmentation

Driving forces for front-end fragmentation are getting stronger

Fragmented front ends increase costs and decrease value from BI

Analytics gateways pave the way to valuable insights

Required features for overarching analytics gateways

Providing a single gateway to multiple analytics and BI platforms offers huge potential for increasing productivity, saving costs and – above all – will make a company more competitive by getting the most out of its data treasures. The most important benefits of establishing an analytics gateway to cover all analytics and BI tools are:

- **Quicker and easier** access to all content from all BI tools – users achieve more with data in less time

- **Less costs** for training, content creation and maintenance

- **Increased user satisfaction,** trust and security

- **More value** from data and analytics through higher usage, content reuse and trust

Users should request unified gateways to all systems to drive productivity when working with data. They should request functions for personalization, recommendation and semantic search in a comprehensive catalog of all content available.

IT should seek lightweight gateways to all tools that are easy to deploy and monitor. Automated metadata collection from leading analytics and BI platforms ensures simple operation and delivers streamlined security. The integration of additional front ends is required to continue delivering a unified gateway.

Major benefits of a common analytics gateway

Key recommendations for users

Key recommendations for IT

Scattered front ends threaten benefits from analytics

Heterogeneous needs and sources drive fragmentation

Today, reports and dashboards must serve ever-increasing requirements for information supply – more decision-makers in more departments analyze more data from more sources. Despite significant advances in tools – ranging from ease-of-use to data handling capacity – the ideal of having a single, undisputed analytics and BI solution that covers the needs of all users is a distant dream for many companies.

Employees are enhancing their skills in understanding and analyzing data. They are increasing their data literacy and demanding more data for their investigations and suitable tools for all forms of data visualization and analysis. Today's analytics and BI landscapes are mostly driven by business users and their needs. Analytics and BI must answer a growing number of business questions from a rising number of sources in less time. These increasing demands are heating a competitive market of data visualization, discovery and self-service oriented tools to augment traditional BI suites. In turn, organizations are enhancing their existing BI environments with new tools, resulting in multiple front ends being deployed, often with overlapping functions and features. Analytics and BI platform vendors are reacting to this development by allowing third-party access to their semantic models or data sets through APIs. This makes it even easier to deploy further tools on top of governed data sources.

Data from the largest worldwide annual survey on analytics and BI use – BARC's 'The BI Survey 18' – shows that organizations today run an average of 2.2 analytics and BI front ends. Even smaller companies typically employ more than a single solution with an average of 1.7. Larger companies typically deploy 3 or more tools – resulting in an average number of 3.3. BARC predicts that the driving forces described in this chapter will increase the number of tools in smaller and larger companies alike.

Another major driving force for front end fragmentation is cloud adoption in BI and data management. The low entry barriers to SaaS and PaaS make it easy to deploy the best tool on the market, instead of living with a second-best option only because it is currently being supported by corporate IT. The marketing departments of the competing vendors are aware of that and promote this approach actively. Most companies make the decision to diversify their portfolio even though they are aware of the long-term drawbacks. Using one tool for all requirements is either not feasible or too expensive for most companies, as the simple requirements of many consumers can often be implemented in cheaper tools than the advanced requirements of fewer power users.

Requirements are too diverse and evolving too quickly to be covered by a single tool

Data literacy, cloud and heterogeneous use cases are causing the fragmentation of front ends

Survey data shows that most companies around the world deploy multiple analytics and BI front ends

The cloud makes it easy and feasible to deploy additional tools for distinct use cases or users

A few years ago, mostly large companies suffered from highly frag-mented analytics and BI front ends, often because of large mergers and acquisitions where IT inherited tool-zoos that were nearly impos-sible to harmonize. The age structure of the tools deployed is also becoming a driving force for fragmentation, as tools are difficult to abandon completely. Today, most mid-sized companies struggle to present critical information to their users in a single platform, and it cannot be expected that the pressure of driving forces will be reduced. A single point of truth remains elusive for many despite significant efforts.
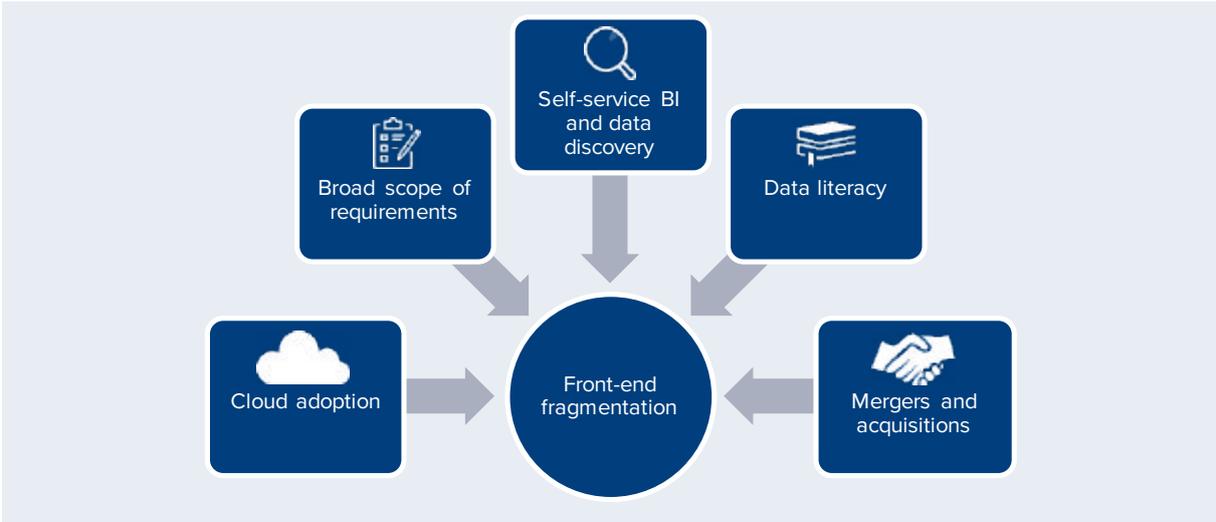
Figure 1: Drivers of front end fragmentation

Multiple tools: Low efficiency and trust

New challenges are introduced when deploying multiple BI front ends because they impose significant limitations on content access and reuse, effectively creating silos. Users cannot quickly gain an overview of all reports, dashboards and analyses available in all the tools maintained. This lack of visibility and transparency often leads to redundant implementation of similar content in various tools. Multiple versions of similar reports instantly lead to discussions about the correct or leading version, while more effort is put into reconciling differences. The net effect is a deteriorating level of trust in results from analytics and BI.

Fragmented front ends are far from optimal, not only for the staff main-taining them, but also for the users. However, as we have seen, they have become a reality for a growing number of companies. Users need to be well versed in using multiple tools from various vendors which have little in common. They must know what tool holds what information and manage multiple credentials. What is often perceived as a resistance to learning new tools is actually a reasonable reaction to the frustration of having to work through multiple tools to find the information required.

Ease of use is vital to engage users in actively using analytics and BI tools. They want a single point of access for all their reports with a consistent interface instead of accessing data from multiple systems with completely different interfaces for navigation and analyses. Combining results from distinct tools for further analysis is usually not possible, and this is where the swiss army knife Excel enters the equation. Users download results from multiple tools and combine them in their spreadsheets with devastating effects on data lineage, automation and security. Downloading information is also common for sharing information across departments that do not use the same BI tool. The usability of scattered tools is way below optimal, leading to low acceptance, usage and trust – unless a single point of access is provided.

Trust	Efficiency
• Usability, useage and content reuse low • Multiple versions of the truth • Transparency, access and automation limited	• Redundant implementation of content • Learn to handle multiple interfaces • Export to Excel to share or combine data

Figure 2: Challenges when using multiple front ends

One gateway to all reports and dashboards

With clear challenges to trust and efficiency on the table and drivers that are not going to disappear any time soon, companies are asking how they can get the most out of their fragmented systems. As shown, approaches pursued to standardize front ends are important, but even the most ambitious companies end up having to maintain multiple front-end tools. Therefore, a quick remedy is required.

Larger companies regularly provide a single point of entry by developing custom enterprise portals for analytics and BI content based on general purpose portal solutions (e.g., SharePoint). This is a feasible approach for companies with a lot of resources who want to link a manageable number of stable artefacts from a small number of tools. BARC's survey data shows that large companies typically deploy more than only a small number of tools. The experience in the field is that changes happen frequently too. So, building and maintaining portals that offer only limited integration, mostly through manually linking to reports of interest, fail to yield results as they rely heavily on labor-intensive maintenance to incorporate all the reports and dashboards available. Beyond the pure effort, in distributed (i.e., self-service) BI environments, manually linking to all reports and updating metadata is a Sisyphean task with little benefit, because there is no central registry for all the changes that take place.

Many companies issue strict policies, forcing all BI spending to be directed at a single strategic vendor. But this decision, besides its obvious benefits, creates significant risks. What if the vendor's solutions do not cover my distinct needs? Even the portfolios of the largest analytics and BI vendors have weaknesses, while it is often the case that smaller, upcoming vendors offer better solutions in certain areas. Around the world, two things happen when BI fails to deliver what users need: Excel usage increases and new, ungoverned solutions are deployed under the radar and out of reach of corporate IT. A single-vendor strategy will be expensive in many ways if user needs are not met. Trying to persuade users to adopt a tool that does not help them complete their day-to-day work will almost certainly result in death-march projects.

The analytics and BI portfolios of many large vendors are shaped by acquisitions rather than evolutionary development. Even several years after an acquisition has taken place, tools are not perfectly integrated and do not offer a unified user experience. This significantly undermines the very rationale for a single-vendor strategy in many cases. If the tools of your preferred vendor do not cover all your requirements, it is worthwhile investing in an open and extendable architecture to deliver what is required without suffering too much from the drawbacks.

Providing users with an up-to-date and holistic view of available content is a challenge when combining front-end tools that do not offer comprehensive integration. The required metadata to produce a complete view or allow overarching search is difficult to collect and combine, as most front ends exclusively offer read-only metadata interfaces. With no pervasive support for standards for metadata exchange in sight, automation of integration from multiple systems requires significant development effort. A modern approach to react to the challenges at hand is required for today's companies to provide a gateway to all their analytics and BI content.

Single vendor policies leave many issues unresolved

Metadata for a complete view of content is difficult to integrate

Gateways pave the way to valuable insights

Users want to use and leverage all analytics and BI content created in an easy-to-use fashion and IT wants to provide the best user experience (UX) without having to assign scarce resources to mundane tasks. Analytics gateways provide a single point of access to all types of content in a consistent interface, serving as inventory and catalog.

Users and IT share a common interest

User access

- Access all BI content
- Single, unified and user-friendly environment
- Personalization of start page and notifications
- Pass-through filters and authentication
- Share and comment on content from all sources

Report inventory

- Inventory of all reports, dashboards and data assets
- Describe, rate and tag content
- Search all content types
- Request new content and track requests

Administration

- Connect all relevant BI systems
- Automated content gathering
- Deploy in cloud or on-premises
- Usage tracking, monitoring and logging
- Effortless setup and maintenance

Figure 3: Critical functions of unified analytics gateways

The number one function a unified BI gateway provides is to serve as the default entry point to access all analytics and BI content. Access is possible to the most popular tools out-of-the-box. Connectivity to less common or homegrown solutions can be added through customization.

Effortlessly connect to all tools

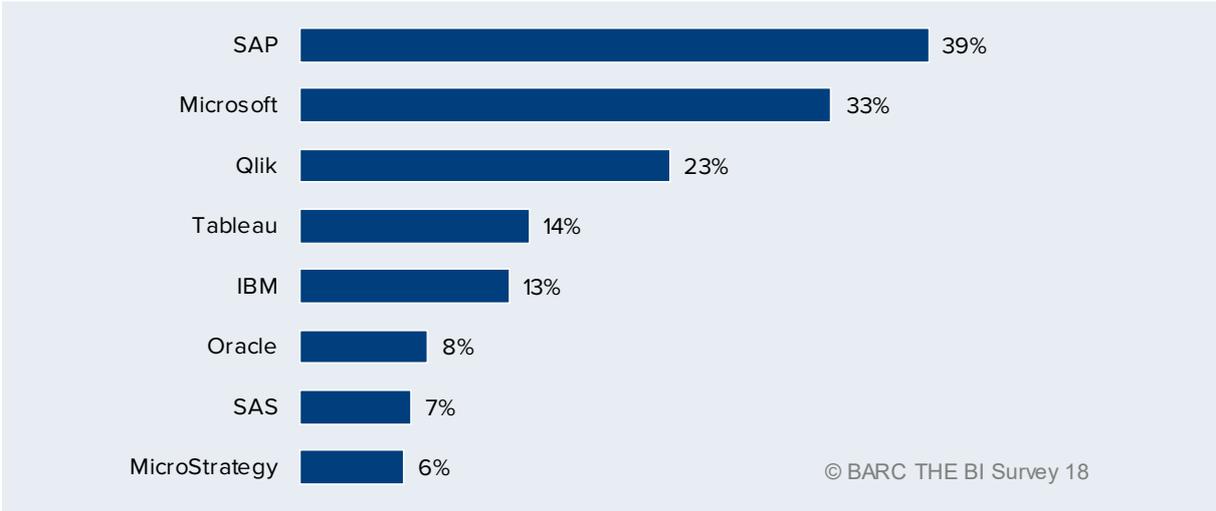| Vendor	Percentage
SAP	39%
Microsoft	33%
Qlik	23%
Tableau	14%
IBM	13%
Oracle	8%
SAS	7%
MicroStrategy	6%

© BARC THE BI Survey 18

Figure 4: Most popular analytics and BI front ends by vendor (The BI Survey 18)

Smooth and easy access can only be provided through a unified environment enhanced with sophisticated functions for personalization. Users can effortlessly build or personalize their individual start pages for BI content and create custom notifications to focus on the most important information delivered. Filters that users create in the BI gateway to personalize their content are passed through to all underlying systems, so that selecting, for example, a favorite country or cost center is done once and not once for each system. When users retrieve reports or dashboards via the gateway, the gateway itself becomes invisible to preserve the interface of the systems accessed.

Users need a quick and complete overview of the content available to them. Self-service is common in most organizations today, making it impossible to manually track all changes made. This requires sophisticated and automated integration of metadata from leading analytics and BI tools on the market including information such as a report's version, author, security information and the date and time when the underlying data was updated. An automated synchronization process that can be either real-time or scheduled gathers these metadata. Users can search any content from any source based on the metadata gathered. Search is not confined to report names and descriptions. Semantic search for content in reports and dashboards (e.g., KPI) is offered to users too. Natural language processing (NLP) allows users to quickly search in a user-friendly manner from any device.

The days when BI tools simply hosted reports and dashboards are long gone. Users are more skilled and better equipped to prepare data for their analytical needs in a self-reliant manner. So, in addition to providing an inventory of all reports and dashboards, an analytics gateway offers an up-to-date inventory and access to the prepared data sets too. The same is true for static content exported to shared folders.

If you have the complete inventory and archive of all content types, you may as well start to collect and track requirements for further content or access to existing items to cover the complete lifecycle of analytics and BI content.

Beyond the basic functions for personalization and extensive search capabilities, users expect modern solutions to recommend useful content to them based on their preferences and usage patterns, just as Netflix and Spotify do through machine learning. More valuable than machine recommendations are peer recommendations. Users should be able to categorize, rate and highlight content in the analytics gateway and contribute to the description. The increasingly popular certification of content by experts in their respective fields is also covered by a central analytics gateway to harmonize the labeling of vetted and approved or yet-to-be tested content across all front ends. Chat and collaboration functions in most analytics and

BI tools are confined to that single tool, while an analytics gateway can provide functions to share content, comments and annotations across all tools.

Modern software solutions must be available in leading cloud platforms like AWS and Azure (SaaS and PaaS) as well as on premises. No matter where the tools are, an analytics gateway can follow the systems that are already in place to ensure a consistent architecture and satisfactory performance. An analytics gateway placed on top of other systems is built on a lightweight architecture. It is easy to maintain so does not take up scarce IT resources, neither does it impact the performance of the underlying solutions – a major driver of user satisfaction (or often dissatisfaction) in analytics and BI.

Cloud and on-premises setups must be available to suit customers' needs

All modern analytics and BI solutions offer comprehensive web interfaces for content consumption. In many solutions, functions for content creation that are especially valuable for power users are only available in installed clients (e.g., data preparation, data modeling). Still, power users rely on squeezing out every drop from their data to support decision-making.

Connect to web and installed clients alike

Not all tools deliver comprehensive usage statistics and monitoring capabilities. Even when these are provided, they cannot usually be compared between tools. An overarching solution should collect the usage information of the gateway itself and the solutions connected to it. This will deliver a detailed view on usage patterns and insight into where and how to enhance the systems in place.

Usage tracking, monitoring and logging for BI on BI

Analytics gateways are emerging in the market

The market for analytics gateway solutions is just emerging, but its development is driven by the increasing demand of organizations hustling with forces that lead to further fragmentation. Organizations demand a one-stop-shop for all analytics and BI applications and content.

Growing demand for analytics gateways will result in a higher number of competing solutions

Most analytics gateway solutions currently marketed to address the above requirements follow a shared vision of providing a single point of access to users. This single point of access is based upon a searchable catalog of reports and dashboards with the clear purpose to leverage existing investments in analytics and analytics in mixed environments by raising usage and reducing duplicate content creation. One of the main differentiators of analytics gateways is their connectivity to source systems and the automation of metadata gathering.

Report catalog as foundation of single access

Various vendors already market solutions for the challenges emerging from multiple analytics and BI front ends. Popular analytics gateway solutions offer comprehensive integration to multiple popular third-party front ends. As an example, Visual BI's 'VBI View'

Vendors offering comprehensive analytics gateway features

solution supports extensive out-of-the-box connectivity to and automated metadata retrieval from SAP, Microsoft, Qlik, Tableau and other leading vendors. Based on the metadata catalog, search and security is implemented together with functions for collaboration and personalization. 'ZenOptics' from ZEDVentures addresses the issue of data governance in self-service oriented and decentralized landscapes to help customers maximize the benefits from existing solutions while minimizing risks. 'Theia' focuses on data stories compiled from multiple sources and on enhancing the user experience. Their goal is to provide a seamless experience across multiple tools. SAP is the most prominent vendor actively engaging in this field with 'Analytics Hub', which delivers unified access to mostly its own SAP Business-Objects BI and SAP Analytics Cloud products.

Some vendors provide a subset of the functions described above to address distinct challenges that organizations are facing today. 'Metrics Insights' gathers and analyzes metrics from popular self service analytics and BI solutions and helps to distribute them through multiple channels. LaunchWorks' 'LaunchPortal' establishes a secure easy-to-maintain gateway to content for external access (e.g., for monetization and embedding).

Vendors offering a subset of analytics gateway features

Vendor	Solution	Positioning
LaunchWorks	LaunchPortal	Consume, monetize and distribute analytics and BI externally
Metric Insights	Metric Insights	Portal for KPIs extracted from analytics and source systems
Theia	Theia	Build overarching data stories to support decision-making
SAP	Analytics Hub	Unified gateway in the cloud for SAP's analytics and BI tools
Visual BI	VBI View	Search engine and gateway for all analytics and BI content
ZEDVentures	ZenOptics	Self-service BI governance through analytics gateway

Table 1: Overview of analytics gateway vendors and solutions

Benefits of a unified analytics gateway

Creating an overarching layer that provides access to all reports and dashboards – regardless of their tool of origin – provides significant benefits in multiple areas. The benefits relate to the single point of entry, automated metadata gathering, trust through certification and enhancements when sharing data:

👍 A **single gateway** to all analytics and BI content with a unified user experience and single sign-on benefits users and organizations by:

> » **Quicker and easier** access to all content from all tools
>
> » **Higher value** of content for users through access to all content
>
> » **Less training** for users required in unified interface
>
> » **Redundant report creation** and maintenance not required
>
> » **Increased user satisfaction** and usage as they get more out of analytics and BI with less hurdles

👍 **Automated metadata gathering** from all analytics and BI platforms to build a comprehensive and up-to-date data catalog of all content available with semantic search drives adoption through:

> » **Visibility of content** from all platforms increases with catalog
>
> » **Quickly find** what is required with overarching and semantic search
>
> » **Improved governance** in self-service environments
>
> » **Less maintenance** effort required than for linking to reports manually
>
> » **Users achieve more** with data in less time
>
> » **Greater user satisfaction** and usage resulting from increased content visibility

👍 Consistent labeling of certified reports, descriptions, ratings and tags delivers value by guiding users to vetted and useful content:

> » **Increased trust** through consistent labeling of certified reports
>
> » **Fewer discussions** about inconsistent values between reports with certification
>
> » **Higher user satisfaction** through content described and rated by peers
>
> » **Increase usage** through higher trust

Efficiency gains are achieved for users and IT

Single gateway saves nerves, time and money

Automated metadata gathering builds and maintains the report catalog effortlessly

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Labeling certified reports and dashboards combined with peer recommendation and rating build trust

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Collaborating with all users is easy in a common gateway, sharing within tools leaves data lineage intact, and content can be tracked and traced. The advantages of sharing in analytics and BI tools instead of spreadsheets are manifold:

» Less effort than exporting to Excel, transforming and sending

» Users trust content shared with unbroken lineage – they can inspect the details

» Security is enhanced as content remains in governed solutions

» Content is reused. Rebuilding is not required to access it in another front end

» Sharing increases usage in all tools without increasing cost of operations

In an era when enterprises typically run multiple analytics and BI platforms, there is huge potential for increasing productivity and saving costs by ensuring that users can get the right content regardless of which system it comes from. Professional analytics gateways that automate the creation of a consolidated view deliver significant value for users and administrators alike. If content is trusted and easy to access, benefits from insights will increase. The goal of analytics and BI is to improve the position of your company in the market. Having better answers for more users in less time will help you achieve that.

Sharing content in BI tools is quicker, more convenient and secure

Increased competitiveness through collaboration, trust and more widespread usage

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Vendor profile

Visual BI, headquartered in Plano, TX, is a niche Business Intelligence & Analytics provider that has transformed the field of enterprise BI and analytics. With 250+ professionals, Visual BI helps enterprises drive better decisions by leveraging a combination of BI software, analytics, and consulting solutions.

Founded in 2010, the firm has received various industry recognitions including Best Companies to Work for in Texas - 2018, Top 50 in Deloitte Technology Fast 500 - 2015, #151 in the Inc-5000 list of fastest growing private firms in the US. Visual BI is an SAP and Microsoft Partner.

Product Excellence

Visual BI's innovative product offerings include ValQ for Modern Digital Planning and Simulations, Advanced Visual Extensions (VBX) for SAP Lumira Designer and Microsoft Power BI, and VBI View — Your Search Engine and Gateway for all your BI & Analytics Content.

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