Cool Vendors in Pervasive Integration, 2016

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Interest in digital business that is influenced by cloud, mobile, IoT and big data aspires a pervasive integration strategy. Directors of integration can take advantage of Cool Vendors' innovative approaches to support emerging requirements and opportunities.

Key Findings

- Application and integration infrastructure leaders increasingly need to integrate mobile apps with back-end applications that weren't designed to operate together.
- Open-source software continues to augment and support integration development and operational efforts to build, deploy and manage data applications.
- Internet of Things (IoT), digital business and logical data warehouse use cases require data virtualization approaches for integration to achieve fast time to value for supporting analytics and operations.
- Enterprises are seeking coordinated, yet flexible, capabilities in integration tooling to create one, easy-to-consume cloud capability.
- Organizations are looking to create a single administrative, monitoring and operating environment for complex, multivendor integration infrastructures.

Recommendations

- Extend your mobile-oriented integration capabilities to enable mobile app development and sharing of data and applications.
- Facilitate logical abstractions in integration architectures by decoupling your data from the underlying application infrastructure and making application and data integrations seamless, complementary activities.
- Explore data virtualization solutions for addressing complex challenges to amass data by using virtual federation approach to optimize efficiency and cost.
- Incorporate an integration hub approach to insulate data requests and business flows from operational applications and underlying data structures.
Investigate integration technologies that can synergize the use of coexisting, multiple integration platforms to create a common environment for deploying and sharing heterogeneous integration infrastructures.

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### Analysis

*This research does not constitute an exhaustive list of vendors in any given technology area, but rather is designed to highlight interesting, new and innovative vendors, products and services. Gartner disclaims all warranties, express or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.*

### What You Need to Know

Advancements in integration technologies are beginning to cater to enterprises’ growing aspirations to fulfill a pervasive integration strategy that spans the full range of personas and integration patterns, and will enable a digital business transformation (see "CIO Call to Action: Shake Up Your Integration Strategy to Enable Digital Transformation"). Gartner’s Cool Vendor selections for 2016 showcase innovations that encompass:

- Mobile-focused integration platform as a service (iPaaS)
- Open-source integration platform aimed at high-productivity support for big data
- Abstraction of integration constructs using data federation/virtualization
- Hub-enabling hybrid cloud services integration and brokerage
- Platform for a common operating environment for consolidating and synergizing heterogeneous integration infrastructures.

We advise clients to explore these concepts and the available technologies (including, but not limited to, the vendors and products described here), as they reflect important trends that bring novel approaches to overcoming traditional barriers in integration practices and technologies.
Built.io
San Francisco, California, U.S. (www.built.io)

Analysis by Elizabeth Golluscio

**Why Cool:** Built.io, formerly known as raw engineering, was founded in 2007 as a services-only business. Being 100% "customer backed," with no outside investment capital, they’ve leveraged their consulting experience to create mobile back end as a service (MBaaS) and iPaaS cloud offerings. This combination may provide a valuable bundling of services to modernize integration infrastructure.

The Built.io team started out with building mobile apps for enterprise clients as well as digital agencies. This gave them an advantage in creating a mobile back-end product to handle the valuable — but hidden — infrastructure services needed for today’s sophisticated mobile apps; they grasp the customer’s requirements through firsthand experience as they built the capabilities for demanding, design-centric marketing agencies. (Empirical evidence shows that 70% of the cost of a mobile app project is concerned with integration.) Mobile app service layers often become the anchoring integration point for all new applications, with web apps using it to expedite delivery as part of an omnichannel delivery model. As a result, Built.io may offer an important "kill two birds with one stone" solution, as mobile and web development increases within organizations, and more service integrations are needed. Their February 2016 update included more than 400 new integrations, from developer tools, such as Docker and GitHub, to API-enabled and cloud software, such as Mixpanel and Zendesk, as well as an enterprise gateway to securely connect to on-premises applications, such as Oracle and SAP.

**Challenges:** Beyond the perennial challenges that all software startups face, such as establishing product-market fit and scaling profitably, Built.io also faces the following challenges:

- **A crowded iPaaS market** — Gartner currently tracks more than 50 vendors in the iPaaS category, 17 of which were profiled in "Magic Quadrant for Enterprise Integration Platform as a Service, Worldwide." Although the market is still young, it is growing substantially; the leading vendors in this space are well-funded startups or established vendors that already enjoy global sales and operations.

- **MBaaS commoditization** — With Parse’s January 2016 announcement that it will wind down its service and make the server open source, the case for its focus on MBaaS layer was called into question. Gartner views MBaaS as a subset of the mobile app services layer and adjacent to the mobile application development platform market — both of which are in flux and will undergo further consolidation and commoditization.

**Who Should Care:** Digital, integration and mobile leaders who are responsible for the strategy and infrastructure for supporting digital channels, and seeking best-of-breed technology providers to build out their API-led, pervasive integration strategy.
Why Cool: The Cask Data Application Platform (CDAP) is an open-source integrated platform that assists developers and integration leaders with building, deploying, testing and managing data-focused applications. Cask’s solutions fulfill and mitigate the needs of, for example, time-constrained and targeted adaptive integration projects, to support data-driven applications and big data initiatives. Through reusable data patterns, configurable application templates, and standardized APIs for packaging and management, Cask’s solutions enable logical abstractions to provide portability. To enable this, the platform decouples data and applications from the underlying infrastructure while intertwining both application and data integration activities.

Cask Hydrator provides a visual development interface for constructing pipelines and establishing a catalog of data flows. Cask’s platform capitalizes on the diverse challenges to support data ingestion. In real time and batch modes, it is capable of operating with Apache Flume, Apache Kafka and REST interfaces, and provides support for exposing data, via REST APIs, to, in turn, support consuming applications or to address query requirements via SQL, Java Database Connectivity (JDBC) and Open Database Connectivity (ODBC). Cask Hydrator’s functionality addresses the intensifying business needs for real-time ingestion of data and for data to be available at any time for analysis, while still maintaining the necessary controls and visibility to enforce security and enable governance.

By reusing abstractions and exposed APIs, CDAP enables accelerated time to build and deploy distributed, data-centric applications. Cask Hydrator’s focus on a self-service user interface extends capabilities that don’t rely heavily on technical coding skills to make data in Hadoop available, and to support data science and SQL analysis. Less technically oriented integration teams are, therefore, able to flexibly establish required data ingestion, exploration and transformation capabilities to meet information needs.

Challenges: The success of open-source technology is driven by the related size and commitment of the associated community. The enormous number of open-source projects in the market that are competing for developers’ attention means that Cask’s efforts to develop a sizable and active ecosystem will require dedicated initiatives. Cask needs to keep pace with fast-changing business landscapes where enterprises may not always commit resources and may be cautious toward open-source projects. In order to do this, it will need to focus its appeal of offerings for users of big data and Hadoop ecosystems. Deployments will need to address a balance of targeted or “one-off” projects as well as support major enterprisewide rollouts of production use cases.

Who Should Care: Directors of integration, enterprise architects or other IT leaders involved in modernizing integration infrastructures and diversifying their delivery models to support information and analytics needs. They should look at open-source platforms, such as Cask, for their low cost of entry, flexibility and, potentially, leverage evolving offerings from open-source community projects.
Why Cool: Directors of integration and data and analytics leaders are increasingly faced with the challenge of integrating an ever growing number of data sources and cloud services in the wake of the growth of the IoT and digital business. They are tasked with utilizing the information assets not only from within their own organizational boundaries, but also from a host of external sources, in a cost-effective and timely manner. Due to the complexity, lack of agility, long time-to-solution and the growing cost associated with the creation and maintenance of a traditional data warehouse, many traditional warehouse projects still fail. Data Virtuality is cool because it helps clients to address these problems by providing a platform that utilizes data virtualization to create a logical data warehouse architecture, enabling them to instantly access and analyze data from multiple data sources — even prior to a physical integration. Data Virtuality provides clients with a host of connectors to allow them to connect to the most popular databases and APIs.

Data Virtuality allows users to query and view their virtually integrated data sources from popular front-end applications (including business intelligence [BI] tools) to significantly reduce the time to retrieve, extract, transform and load data. This allows directors of integration and data and analytics leaders to forgo the tedious and manual tasks of planning and executing ETL scripts, and focus on performing other intermediate steps. It also enables companies that are otherwise not confident with moving data from various sources (due to compliance issues), to confidently integrate data while leaving it to reside in its current location, and to still draw all the advantages of performing data analysis.

Another differentiating factor which makes Data Virtuality cool is that it balances its data virtualization layer with a physical instantiation layer. Its data virtualization layer is used to provide flexibility and agility for the data modeling process, and to rapidly accommodate changes in the data models using familiar SQL language. The physical instantiation layer helps provide scalability and a predictable performance by providing features that include slow-changing dimensions, batch imports, upsert jobs, relational online analytical processing (ROLAP)-style aggregations, auto-generated ETL, and change data capture (CDC) connectors for a number of popular relational database management systems (RDBMSs). The combination of virtual and physical data integrations in one platform helps companies to "modify its SLAs" without much complexity, depending on whether the current use case stresses flexibility (data exploration and data modeling) or performance (serving reports to hundreds of users).

Data Virtuality is also different from other data virtualization tools because it allows users to integrate NoSQL data stores with relational data stores and yet be able to query in SQL, thus helping companies stay productive in using the SQL skills that are already familiar to integration teams. It also allows users to write back data to the source systems in a controlled manner and allows for data exchanges between popular applications (for example, it allows for the integration of data between a CRM and ERP system). User inquiries could change continually with respect to
frequency and content, and Data Virtuality addresses this by continually updating the data structures that have already been created using machine learning capabilities.

**Challenges:** Data Virtuality is operating in a crowded market for data virtualization and data integration tools. Vendors of self-service data preparation, data warehousing, metadata management, data discovery and analytics solutions also provide platforms that have some data virtualization features as an underlying capability. As a smaller player with no more than 50 employees (as per their LinkedIn page), Data Virtuality needs to roll out a comprehensive go-to-market strategy to help it further differentiate itself from the other data virtualization tools available in the market.

If Data Virtuality is to use its technology to better penetrate the market and support clients with large-scale integration project requirements, then it needs to review its business model and go-to-market strategy, and expand its sales and service teams to break into new verticals and even geographies (at the moment it only has offices in the U.S. and Germany). Data Virtuality has partnered with CBIG Consulting, Looker, Exasol and Tableau, but needs to grow its partner ecosystem for wider reach, presence and implementation support to fulfill supply-side requirements.

Another challenge might be establishing a pricing model that is compelling when the product is purchased alongside tools that provide data virtualization and may offer some of the same capabilities.

**Who Should Care:** Directors of integration and data and analytics leaders responsible for integration who are looking to implement a data virtualization platform in order to create a logical data warehouse architecture for agility and faster time-to-solution for BI and analytics initiatives, or to integrate various applications or data sources rapidly, could do well to investigate Data Virtuality.

**Maestrano**

Sydney, Australia (https://maestrano.com/)

*Analysis by Keith Guttridge*

**Why Cool:** Maestrano combines the role of cloud service brokerage (CSB), iPaaS, master data management PaaS and business analytics PaaS into one easy-to-consume cloud offering. It also provides a catalog of common software as a service (SaaS) applications for its clients to use. Maestrano then integrates these applications via its patented, cloud-based Connec technology. Its Connec data sharing platform constantly synchronizes the SaaS application data with a canonical data model in the cloud data store, thus removing the need for the client to worry about how to integrate the various SaaS applications with each other.

It is this data store that is then used by the Impac part of the platform to provide analytics and insight based on the data that has flowed between the various SaaS applications.

Maestrano also provides API access to the data within the Connec Platform, allowing clients to access and update any of the data stored while knowing that it will be reliably replicated back to the SaaS system of record. This enables clients to rapidly create new applications, leveraging data that
would normally be held within SaaS applications without having to learn the unique APIs of each
SaaS application that they use.

**Challenges:** While the data hub architecture has worked well for many organizations on-premises, a
number of clients are still resistant to have their data stored in the cloud. When combined with the
various data sovereignty rules being imposed by different countries, Maestrano may find that the
platform will have to be widely deployed across many data centers worldwide in order to alleviate
some of these concerns.

The majority of organizations are also still coming to terms with integrating with the cloud and the
challenges that brings. Many will continue to purchase their SaaS applications independently and
use a more general-purpose integration approach, such as an iPaaS. As a result, platforms like
Maestrano might seem too restrictive with its selection of preintegrated SaaS applications.
Organizations may not be ready to comprehend all of the benefits that the all-in-one platform can
bring.

**Who Should Care:** Application managers who are used to the insights an application suite can
bring, should look at platforms like Maestrano as an enabler for adopting a hybrid application
portfolio that maintains visibility, accessibility and insight into the data that resides in disparate
applications. Directors of integration should look at platforms like Maestrano to enhance existing
integration capabilities and help deliver application ecosystems that create more business-focused
departments within the organization.

**Media Driver**

Dallas, Texas, U.S. ([www.mediadrive.com](http://www.mediadrive.com))

**Analysis by** Massimo Pezzini

**Why Cool:** Media Driver is a software and system integration company, which is highly specialized
in application integration, enterprise service bus (ESB) and message-oriented middleware (MOM)
technology. In addition to consulting and training services, the 25-employee-strong company also
provides the Media Driver Integrated Console, an all-in-one tool that manages integration
middleware products from multiple providers. The Media Driver Integrated Console is a software
product that provides centralized administration, management and role-based access control for a
variety of integration middleware technologies from multiple providers. The product empowers
integration specialists and IT operations teams to monitor, manage and administer a distributed,
multivendor integration infrastructure from a single, centralized point of control. This is a particularly
important capability as organizations evolve their integration infrastructure toward a distributed and
hybrid (on-premises and in-the-cloud) integration platform (HIP). Being able to provide a single point
of operation is key for organizations implementing a HIP vision.

For years, medium-large and large organizations have striven to minimize the number of integration
platforms they use in order to reduce costs and maximize skills reuse. Due to the need to support
cloud, mobile, social networking, big data and IoT integration requirements, the number of different
integration technologies in place is proliferating, not reducing. To support the growing number of
use cases and encourage a decentralized, do-it-yourself integration model while retaining governance and control, progressive directors of integration are moving toward a HIP strategy that combines classic on-premises platforms (MOM, ESB, extraction, transformation and loading [ETL]), B2B Gateway Software and managed file transfer with cloud-based platforms (iPaaS and iSaaS) and API management tools (see "How to Implement a Hybrid Integration Platform to Tackle Pervasive Integration"). These HIPs are often aggregated by combining products from multiple vendors and, therefore, directors of integration look for tools that can help them monitor, manage and administer such a complex set of technologies from a single point of control.

Media Driver proposes to address this challenge with its agentless and extensible Integrated Console that can support, in a coherent and unified fashion, a multivendor and distributed middleware environment. In addition to offering functionality specifically for each middleware product, the Media Driver Integrated Console provides centralized, role-based access control, data and metadata encryption, message send and browse tools, monitoring, statistics, and other related functionality. The product currently supports Apache ActiveMQ, Apache Camel, IBM WebSphere MQ, Red Hat JBoss A-MQ, Red Hat JBoss Fuse, TIBCO Rendezvous, TIBCO Enterprise Message Service and other products.

The Media Driver Integrated Console has been available since the second half of 2014 and has been purchased by a few global organizations. Of those, approximately half a dozen are in production.

**Challenges:** Apart from the awareness, partnership and dubious viability problems typically faced by startups proposing innovative products, Media Driver faces two additional challenges:

- **Offer completeness** — The Media Driver Integrated Console is based on an extensible architecture, which allows the company to implement support for additional integration platforms in a relatively short time frame. However, the product is currently very much focused on supporting the Apache, Red Hat and IBM ecosystems, which represent a significant, but still relatively small, portion of the market. This may limit uptake by user organizations that have already adopted integration technologies from other vendors and are looking for a readily available tool to support their HIP environment’s IT operations.

- **Cloud support** — Although the Media Driver Integrated Console can be deployed by clients in a public infrastructure as a service (IaaS), the product is not available as a cloud service, which may be a requirement for cloud-centric user organizations.

**Who Should Care:** Directors of integration in the process of implementing a HIP by assembling products from different providers should consider leveraging multivendor management, monitoring and administration platforms such as the Media Driver Integrated Console. This type of capabilities will help reduce IT operation costs and institutionalize a centralized point of control for a HIP meant to empower integration specialists in central IT, as well as semi-independent, “ad hoc” integrators in LOBs and business users acting as citizen integrators.
Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"CIO Call to Action: Shake Up Your Integration Strategy to Enable Digital Transformation"

"How to Implement a Hybrid Integration Platform to Tackle Pervasive Integration"

"IoT Data Proliferation Elevates Data Integration Challenges"

"Converging Data and Application Integration: A Step Toward Pervasive Integration Using a Hybrid Integration Platform"

"Survey Analysis: It's Time to Push Your Data Integration Tools Beyond the Basics"

"Layer MADP and RMAD Over Mobile App Services for a Potent Mobile App Strategy"