

Developing a Scalable Platform for a Digital Marketing Agency

At a Glance

PROJECT

Digital Marketing Platform

TYPE OF PROJECT

- Data Integration
- Data Warehouse Design
- Reporting
- Data Visualization

TECHNOLOGIES

- Microsoft BI Suite
- SSAS
- Microsoft Sharepoint
- Visual Studio
- Talend
- Tableau
- Aster Data
- Hadoop Hive
- Java
- Amazon Cloud Services

TEAM SIZE

- 20 InfoCeptians
- 25 Customer Associates

OUR ROLES

- Project Management
- Solution Architecture
- Data Warehouse Development
- Java Development
- Reporting and Quality Assurance

USERS

- Digital Marketing Managers
- Brand Managers

A leading digital marketing agency needed a new platform that would more effectively enable its clients to manage their digital marketing programs. InfoCepts developed a highly scalable software suite that uses the Microsoft BI Suite, Microsoft Sharepoint, and Amazon Cloud Services to provide the means to analyze terabytes of web and customer data (in real-time) and to micro-target customers with highly specific one-to-one messaging. Designed for self-service, durability, and scalability, the architecture minimizes the need for technical support, while providing robust analytics and data visualization.

➔ Business Challenge

Today's digital marketing agencies operate in a rapidly evolving environment driven by a dynamic technological landscape and an increasingly savvy consumer. To keep pace, these agencies need a digital marketing platform that can unify and integrate data from multiple digital channels (including social media) and harness rapidly evolving metrics and key performance indicators to measure return on investment. By unifying and integrating data from multiple digital channels, the most effective digital marketing architecture will enable clients to realize the maximum impact for every advertising dollar spent, converting interactions to revenue and leaving a lasting impact on the consumer.

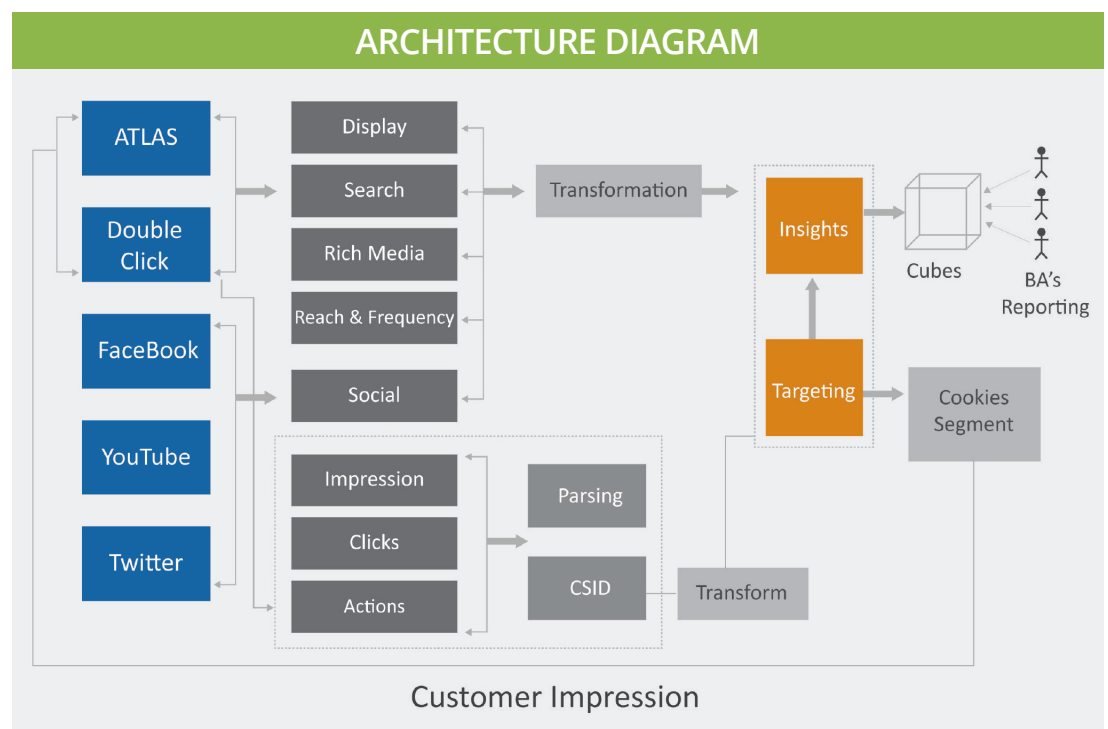
Digital marketing agencies have been challenged with developing technical solutions to help their clients manage the wealth of digital marketing and customer-related data they collect. Agencies are investing millions of dollars to build out IT infrastructures to serve these market needs.

Our client, a marketing agency with services that include digital advertising, content creation, media buying, strategic counsel, analytics, technology, and user experiences, suffered from an inflexible digital marketing platform that relied on a fragmented, semi-automated approach. This made it necessary for internal users to access all data via manual queries and made it difficult to add new features seamlessly. Because the platform was non-scalable, the company was forced to develop a new technical strategy for each customer, which made it difficult to consistently meet service level agreements and to bring new clients on board. Our client needed a scalable new digital marketing platform — and turned to InfoCepts for help.

→ Our Solution

Our team worked in close partnership with our client to design and develop a new digital marketing platform. The result? A software suite that enables marketers to organize digital marketing data for analytics and ad targeting. The suite also strengthens the creative process by allowing multi-brand marketers to reuse tools in a number of markets worldwide, thereby trimming production time and costs.

At a high level, the software suite provides the following functionality:



Using terabytes of real-time web and customer data, the software enables our client to fine-tune customer segments and engage in highly customized one-to-one marketing. The suite's flexible infrastructure allows for distributing digital content and for creating interactions across marketing channels and devices. Robust analytics offer real time data visualization, analytics, and reporting on terabytes of data.

With the new software suite we created, our client can access a single platform for analytics across multiple digital channels and present data in an easy-to-use cube.

Highlights include:

- Automated data collection from a variety of sources: display data, search data, rich media data, reach and frequency data, paid social data, and cookie level data
- A metadata-driven onboarding process that dramatically reduces the turnaround time for new clients
- Availability of all the metrics in SSAS cubes, customized for each client and used to gain insights on campaign performance by slicing and dicing data through off-the-shelf tools like Microsoft Excel and Tableau.
- A user-friendly interface, which enables business users to carry out a number of tasks on their own (defining campaign, data categorization, and data corrections) without the need for technical support
- Automated output of customer segment and specific cookie-level data to ATLAS ad servers, which enables custom interactions with targeted end-users
- Optimized data processing for cube instantiation to minimize processing time

A scalable architecture

Our software's highly-scalable architecture integrates data from multiple sources — display data, search data, rich media data, reach and frequency data, paid social data, and cookie-level data. To process terabytes of data on a daily basis, it uses Aster Data and Apache Hadoop Hive.

The architecture also features:

- Efficient onboarding of new clients and easy definition of data rules that can be handled by business users without any developer support required
- Grounds-up definition and creation of a data warehouse tailored specially for digital marketing data
- Optimized use of the latest MapReduce databases — Hadoop Hive and Aster Data — to process voluminous cookie-level data before the data is integrated into a Microsoft SQL Server



- Use of Amazon Cloud to leverage cost benefits of cloud computing
- Just-in-time use of computing resources (which creates a cluster only when required for computing and shuts it down after use to minimize platform maintenance cost)
- Savvy use of open source software to reduce overall development and licensing costs (Talend for automated job definitions, Tableau for reporting, and Tortoise SVN)

Powerful data scheduling and collection

Given our client's robust data needs, we created a highly-automated process that collates data from multiple sources and loads both structured and unstructured data into the system. Data definitions can be modified via metadata based on individual needs.

Our data loading features also enable our client to:

- Process data (and missing data) for its new clients, with minimal changes in metadata
- Modify cookie segmentation rules based on client needs (Cookie segments are automatically published as per new segmentation rules.)
- Create customer-specific cubes that are easily accessible via URL links.

High degrees of data quality

The software suite regularly performs data quality checks to ensure consistency of data across source systems, data warehouse, and cubes. Well-defined data quality processes make it easy to handle special requests by new clients for data quality checks.

A dynamic user interface

A customized SharePoint page provides each of our client's customers with one-stop access to the platform. Moreover, the SharePoint interface offers access to cubes and can be shared over the web. This gives business users the ability to perform daily tasks such as: defining a marketing campaign; performing data categorization (action, advertiser, campaign, placement, search, and site); and performing bulk data correction for required data points.

➡ Delivering a Strong Return on Investment

Our highly scalable, reliable, and flexible new digital platform provides cutting-edge capabilities and has a long technical shelf life.

The suite offers a variety of benefits to our client's digital marketing customers, including:

- A holistic view of marketing performance, audience performance, and preferences, which drives a well-informed digital marketing effort.



- Personalized advertisements across digital channels that result in savvy media spending.
- The availability of all possible metrics in one integrated customized cube, which ensures that business users can slice and dice data in any possible manner without relying on technical support.
- Implementation on the Amazon Cloud, which ensures that any spike in customer demand can be handled without need for a hardware platform upgrade.
- Support for handling big data via use of MapReduce databases such as Hadoop Hive and Aster Data.

Our client is actively using the new digital marketing platform with five customers and expects to bring on more than 20 new clients — including many Fortune 500 companies — in the next year.

➔ About InfoCepts

Since 2004, InfoCepts has delivered on the promise of business intelligence and data warehousing. Using leading-edge technologies, we've designed and delivered world-class systems for data syndicators, large global enterprises, and leading software companies. Some of our marquee, world-class projects have included custom BI applications that serve thousands of users, mobile analytics applications used by hundreds of sales professionals, and "big data" initiatives for social media analytics.

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