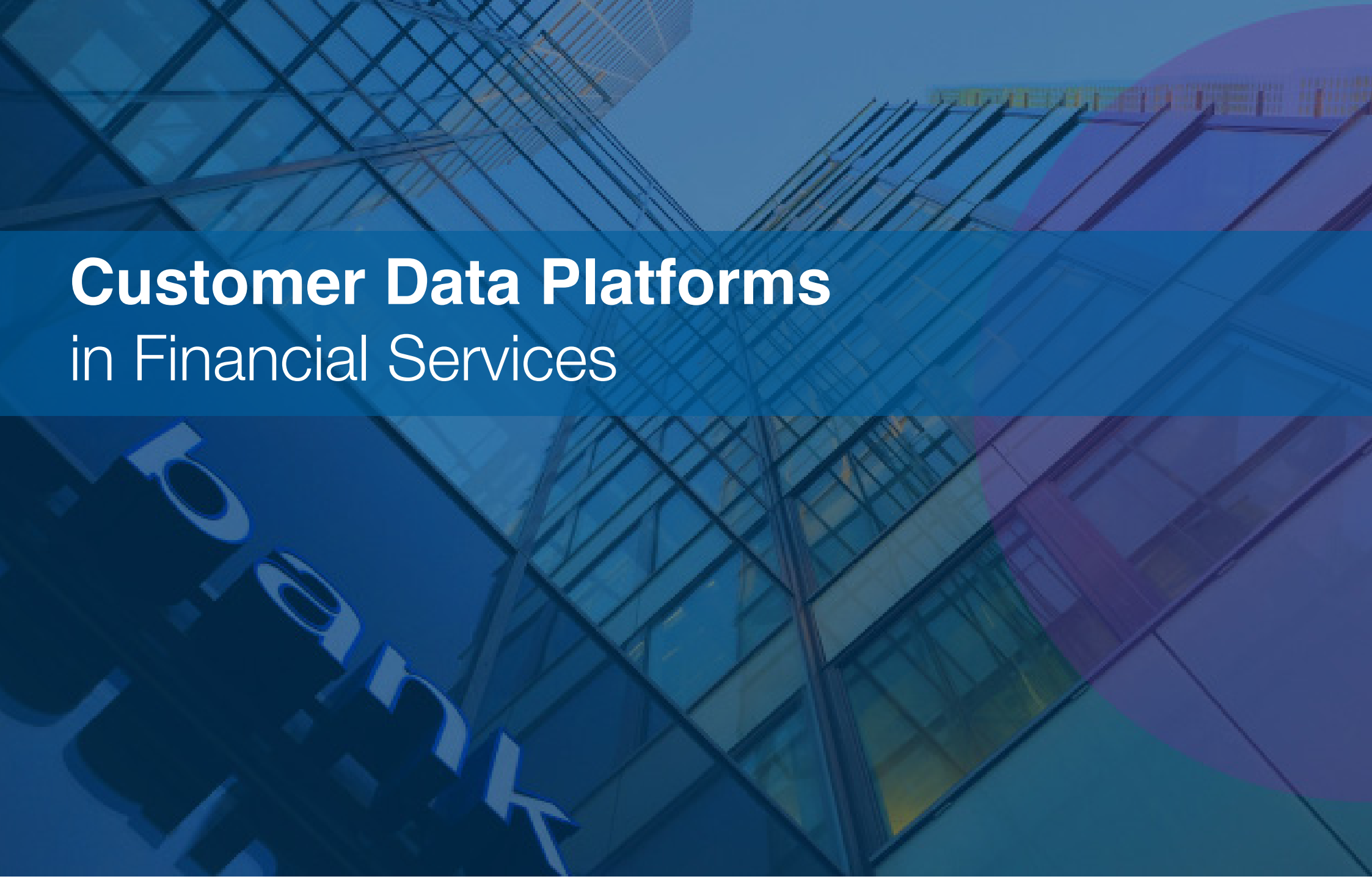

Customer Data Platforms
in Financial Services

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The Customer Data Platform from D4t4 Solutions

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Introduction

Remember the good old days of financial services marketing, when a marketer's toughest decision was whether to offer a toaster or clock radio for opening a new account? Neither do we, actually: after all, that was more than fifty years ago. What we do recall is the pace of change over the past decade as consumers quickly adopted revolutionary technologies including smart phones, social media, online banking, and cash-free payments. The financial marketer's job has become infinitely more complex as consumers interact through new systems in more channels, expectations skyrocket for a convenient, personalized service, and regulators try to balance safety, privacy, and fairness.

The only way marketers can thrive in this new landscape is to expand their own technology toolkit with a particular focus on taking full advantage of the first party data created by all the new systems. Specifically, they need to:

- Gather first party data in real time as it is generated by customer activity
- Unify and process that data to find important events at an individual level as they occur
- Profile customers and apply advanced analytics to determine how to react to those events
- Deploy those reactions across whatever channels the customer has chosen to use in a timely manner
- Do all this with tight security and in compliance with regulations governing privacy, risk, money laundering, and other requirements

It's a long way from picking the best toaster.

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Challenges

Achieving this level of seamless, instant data acquisition, processing, and activation isn't easy.

Challenges include:

- Disjointed operational systems, each creating isolated pools of data that contain one part of the complete customer history
- Constant introduction of new channels, new systems, and new data types, which makes it difficult to combine data into a complete customer view
- Increasingly complicated financial products, which require more advanced analytics to assess and respond to individual customer needs
- Multiple interaction channels, which must all be connected to shared data and analytical systems if customers are to receive consistent, optimized treatments
- Growth of real time interactions, meaning that data capture, processing, and activation must occur almost instantly
- Compliance with regulatory requirements for data security, consumer privacy, anti-fraud and money laundering programs, fair credit and marketing practices, institutional risk management, and more
- Pressure to learn new marketing techniques and deploy new marketing systems, which are essential for success but themselves create a major drain on time and resources

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Solution Requirements

It's obvious, especially in hindsight, that the key to addressing these challenges is to create a central database that gathers customer information from all sources, unifies it to create a single customer view, applies the analytics needed to select optimal customer treatments, and shares the results with all interaction systems.

Indeed, financial services companies have been building systems that fit this description for decades. They've gone by many names but the most common is probably Data Warehouse. The limited success enjoyed by these systems has been due to the limits of available technology rather than a lack of vision on the part of banks and insurers.

To understand this, let's look a little more closely at requirements for this central customer data system:

- Easily capture data from new sources. The key goal is flexibility, since new sources and data types appear constantly. This means the system must adapt to new inputs with a minimum of technical effort to define the elements in each source feed or the schema of the underlying data model. Unfortunately, the relational database technology used until recently requires data elements to be mapped in advance and struggles to deal with unstructured or semi-structured data such as social media comments and Web logs.
- Find personal identifiers (name/address, email, phone number,account ID, browser cookie, mobile device ID, etc.) on ingested data and determine which refer to the same individual. This is needed to create a unified customer view. It can involve complex matching processes and rely on external sources to make connections that cannot be derived from the data itself. These specialized functions are quite different from linking accounts belonging to the same customer, a skill many financial institutions mastered long ago.
- Clean, harmonize, and transform inputs so they can be loaded into a common data model that makes them suitable for use by analysis and interaction systems. This may include creating derived variables such as average account balances, next best offer, lifetime value calculations, and predictive model scores. Although this is a typical data warehouse requirement, the details of what marketers need are unfamiliar to most IT teams and may not even be obvious to the marketers themselves.

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- Expose the assembled data for easy access by analysis and interaction systems. This may require converting the data to formats required by particular systems, creating specialized indexes or other structures to speed access, or opening the underlying data itself to access through APIs or SQL queries. Again, this is a standard data warehouse requirement, but access is typically limited to a handful of systems.

- Do all of this in real-time or near real-time. This is one of the biggest deviations from the typical data warehouse, which rarely supports updates any more often than daily and might be limited to weekly or even monthly updates. This reflects the overhead involved in rebuilding typical data warehouse data structures such as star schemas and specialized indexes. These are nearly always done in large batch processes that reorganize the entire database, making it difficult to incorporate incremental changes as real time data flows in.

- Affordable, agile, and adaptable to marketer needs. The careful planning needed to manage relational databases makes those systems inherently difficult to change and requires that changes be made by technical experts, not marketers or other business users. This adds cost as well as time to any adjustments. The problem is compounded by most IT departments' limited understanding of marketing activities.

In short, financial services companies have been building customer databases with tools that are ill-suited to the task. It's fair to assume that their IT staffs are skilled, committed people who have gotten the most value possible from the resources available. But as the need for more powerful solutions has increased, the gap between those requirements and what conventional solutions can deliver has grown to crisis proportions. It's time for something new.

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Customer Data Platforms

This is where the Customer Data Platform comes in.

The CDP is packaged software that is designed especially to meet modern marketers' needs for a unified customer database. Key features include:

- Direct data collection. Many CDPs provide tools to collect data directly from a company Web site and mobile apps. This lets users bypass existing Web analytics products that can be labor intensive, expensive, slow, and otherwise unsuitable tools for gathering such data. Like APIs, these tools are designed to be simple to use but still require a certain amount of technical expertise and time.

- Ingests data in any format. Many CDPs will accept data streams without predefining the contents. This enables them to adjust easily to new data sources or to new data elements within an existing source. The data can later be extracted from the CDP data store by searching for specific contents. This is made possible by "big data" technologies such as JSON data format and HDFS (Hadoop) file storage. This flexibility is among the biggest differences between CDPs and older systems. Note that big data technologies are also used by non-CDP systems such as "data lakes". The difference is the connectors and other components that are packaged together with the CDP: the technology alone is just one part of what makes CDPs effective.

- Stores any level of detail. This is another capability that flows directly from the technology used to build a CDP. It distinguishes CDP from systems with rigid data structures, including many CRM, marketing automation, and Data Management Platform (DMP) products. Storing detailed data is especially important because marketers often don't know in advance what information will turn out to be important. The CDP gives them a way to analyze data to discover what matters and then to retrieve that data from past inputs immediately. Without storing that data in advance, marketers who discover a particular element is useful would have to reconfigure their systems to start capturing it and then wait weeks or months before they had accumulated enough history to be useful.

- Designed around customer identities. The CDP is built from the ground up to create a unified customer profile. This means designers can build in functions and data structures to assemble and access data from a customer perspective. This saves work that would otherwise be needed to create capabilities from scratch

by developers building a custom system the same underlying technology. In particular, CDP designers can build in features to properly manage personally identifiable information (PII), which requires special protection and treatment under privacy regulations. This is another distinction between CDPs and DMPs, which primarily manage anonymous device identifiers, such as browser cookies and mobile app IDs, used to select advertising audiences.

- Prebuilt integrations with common application systems. These typically include customer-facing systems such as Web content management, CRM, and call centers; marketing systems such as email and Data Management Platforms; and analytical systems such as predictive modeling, reporting, and business intelligence. Specialists in a particular industry like financial services will also have standard integrations with industry systems such as loan servicing, investment management, and checking accounts. These integrations speed deployment of the CDP and simplify on-going maintenance because the CDP vendor keeps them updated as the source systems change.

- Open APIs for new integrations. Nearly all CDPs include an API that lets users create custom connectors for new sources. This is part of their core design goal of collecting data from all sources. Often the CDP vendor will itself create a new connector for a client, especially if it's to a system the vendor thinks other clients are also using. All CDPs can also load data through file imports. One caveat is that while CDPs often provide interfaces to simplify connection with a new data source, this is still a task that takes some technical savvy – so it is not realistic to expect a casual marketing user to integrate the CDP with major application systems.

- Allows external access. Many systems assemble customer profiles for their own purposes, such as predictive analytics, content recommendations, advertising audiences, or customer service. But they typically use data structures that are optimized for their own primary purpose. That's entirely appropriate but these structures are not generally suited to sharing the data with other systems. CDPs have data sharing at their heart, so they use flexible core storage structures, feature APIs, SDKs, and extract functions to access that data, and they include features to reformat the data into structures that are compatible with external systems. As with ingestion, they also include prebuilt connectors to common external applications.

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- Built to be managed by business users. Some technical knowledge will always be needed to work with customer data. Similarly, some cooperation will always be needed from corporate IT groups and others who control the data sources and execution systems. But CDP vendors work consciously to minimize the technical effort required to use their systems, empowering business users as much as possible to meet their own needs. CDPs give business users control, yielding a system that can more easily adapt to new business requirements than one that requires help from IT to make any sort of change. A side benefit is it's almost always cheaper to run a CDP than a conventional data warehouse or other IT-managed system.

- Supports compliance with personal data regulations. Protecting personal data has always been important but the European Union's General Data Protection Regulation (GDPR) has added many specific new requirements. Many of these are best met by gathering customer data from source systems into a unified central database and sending changes from that database back to the source systems when necessary. This is exactly what the CDP was designed to do, even though GDPR wasn't necessarily on the designers' minds at the time. Other GDPR requirements, such as audit trails to track consent and data use, are also offered by some CDPs.

Let's be clear: the CDP isn't a silver bullet. It won't solve all your problems or even fix all your customer data issues. But the CDP is a system designed specifically to address those issues, so it has a better chance of meeting more of your needs that pretty much anything else.

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Financial Services Applications

Financial services marketers have their own special needs, so it's reasonable to wonder how CDP serves them. Here are some typical use cases and the CDP features they leverage.

- Respond immediately to an online loan application by using information in the loan application to verify the customer's identity and look up their credit score and payment history. This requires real-time integration of the online forms with both the unified customer view and external credit rating system.

- Offer a multi-product insurance discount to a customer who has explored auto, home-owners, and boat insurance in separate areas of the company website. This requires combining information from several different sources within the unified customer view.

- Have an investment advisor call a customer who has recently made a very large deposit and filed a change of address, indicating they have recently sold their home. This requires scanning for specific events and signals across different systems and feeding alerts to a CRM system.

- Personalize offers on the website home page for customers who visit without logging in. This uses identify resolution that recognizes the customer's device and looks up the next best offer, as determined by a recommendation engine that draws on the unified customer profile. Since websites load in around one second, effective personalization depends upon real-time connectivity between the CDP and the recommendation engine.

- Highlight possible data entry errors by a call center agent. This requires comparing the data entered with a "golden record" of correct information stored in the unified customer database.

- Append the browsing history of an unknown Web site visitor to an existing customer profile when the customer identifies herself by logging in. This requires the CDP to link the browser cookie ID of the unknown visitor to a customer ID in an identity resolution system.

- Recognize an inbound phone call as belonging to a customer who has just failed to complete a mutual fund purchase on the mobile app and route the call to an appropriate agent. This requires capturing customer behavior in real time, connecting the mobile app and telephone identifiers, and using the information in the call routing system.

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- Prompt a customer who has started a credit card application on a mobile app to complete the application when they visit the website. This requires storing the data in a shared system and informing the web personalization system that a high priority activity has taken place.

- Update an insurance customer's satisfaction score based on a social media complaint and alert their agent if the new score is below a specified threshold. This requires the CDP to coordinate and orchestrate a range of actions, including: capturing and ingesting social media comments, matching the social media identity to the customer identity, undertake sentiment analysis to identify signals of dissatisfaction within the social media post, feeding the new data to a predictive modeling system, and reacting to the score change event.

- Feed financial transactions to systems that scan for money laundering, fraud, and loan repayment risk. This uses the unified customer profile as a single integration point to consolidate transactions from multiple systems and share them with other systems, avoiding the need for multiple point-to-point integrations.

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What to look for in a Financial Services CDP

Every institution will have its own requirements for a CDP based on its particular situation. But here are some features that will be needed by most financial services organizations.

- On-premises deployment. Many financial institutions require on-premises deployment of some systems, and especially those holding sensitive customer data. The CDP certainly falls into this category. While some CDPs offer on-premises options, the majority have been designed to operate within private or public cloud environments.
- Prebuilt integration with operational systems. These will include back office systems as well as customer facing systems. If your institution runs its own custom systems, then an API to build custom connectors is more important.
- Real time data ingestion and processing. It's important to consider the full cycle time between receipt of new data and its availability for use. The time in between is spent on data load, transformations, identity resolution, consolidation, formatting, and other tasks. It can vary substantially from one CDP vendor to another.
- Flexible data model and easy adjustment to new inputs. In theory, most CDPs can support any data model but there are often practical limits. You should ensure the CDP can support the major objects you know will be required for your business and should examine the effort needed to accommodate new data sources, elements, and data types as they appear.
- Data standardization. Your institution will have its own rules for data quality, standard formats, product names, location tables, and other items that need to be incorporated in a database that will be shared by many of its systems. Check that the CDP can apply these within its own processing flows and can easily adjust as they change.
- Advanced transformations. Financial services firms have many complicated formulas to calculate profitability, customer value, risk, and other items. These are in addition to standard marketing calculations such as predictive model scores. The CDP should let users define these calculations, perform them automatically, and share the results with all other systems. You'll also want supporting capabilities such as data quality assessment and model performance monitoring.
- Regulatory compliance. The regulatory burden on financial services is high. A CDP can help meet many regulatory requirements, but you'll need to look at specific functions needed to do this. You'll also want to be certain the CDP itself has the certifications and security features needed to comply with regulatory rules and corporate standards.

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Case Study | Global Bank

One of the world's most successful and prestigious banks implemented Celebrus to personalise their customers' experience by enhancing the bank's visibility of customer behavior. Celebrus captured highly granular customer data including life event signals and changes in customer details. These were used to identify next-best-actions and delivery them across Web, email, branches, and mobile apps.

The project **results in up to 70x uplift in click rates, 5x uplift in campaign conversions, and millions of dollars of incremental revenue**. Investment in Celebrus was recouped within months of deployment.

Summary

Financial services marketing is more complicated than ever. Accurate, complete, and accessible customer data is essential for success, yet few organizations have what they need. The Customer Data Platform offers a new solution that uses modern technology and specialized design to solve many customer data challenges. If your current customer data situation is unsatisfactory, it's worth giving CDP a look.

About Celebrus

Celebrus captures the market's most complete picture of customer behavior and experience, creating events and profiles in real-time for 1-to-1 personalization and streaming analytics. Celebrus is quick and easy to deploy and connects to industry-standard data applications for customer insight and engagement. Celebrus also gives clients complete control by enabling best-in-class privacy compliance and flexible options for hosting data on-premise or securely in the cloud.

Celebrus is used by global businesses in banking, insurance, retail, travel, automotive and telco industries, collaborating with leading industry partners to drive rapid transformation in customer engagement programmes.

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The Customer Data Platform from D4t4 Solutions

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About CDP Institute

The Customer Data Platform Institute educates marketers and marketing technologists about customer data management. The mission of the Institute is to provide vendor-neutral information about issues, methods, and technologies for creating unified, persistent customer databases. Activities include publishing of educational materials, news about industry developments, creation of best practice guides and benchmarks, a directory of industry vendors, and consulting on related issues.

The Institute is focused on Customer Data Platforms, defined as ***"a marketer-controlled system that maintains a unified, persistent customer database which is accessible to external systems."***

The Institute is managed by Raab Associates Inc., a consultancy specializing in marketing technology and analysis. Raab Associates defined Customer Data Platforms as a category by Raab Associates in 2013. Funding is provided by a consortium of CDP vendors.

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