



Timing Is Everything

Enabling Data-Driven Real-Time
Customer Interaction

Ab INITIO

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Abstract

A key challenge for communications service providers (CSPs) is preventing their customers from jumping to a competitor. In some markets, jumping can be as easy as swapping out SIM cards in a phone. CSPs need to find ways of maintaining customer loyalty in highly competitive markets where different providers can easily appear interchangeable. CSPs who distinguish themselves through high levels of customer service and consistent, context-sensitive communications can build tremendous levels of customer loyalty.

Providing context-sensitive responses to hundreds of millions of people – while also giving each person a feeling of individualized attention – is made theoretically possible by the increasing power and ubiquity of digital technologies. However, successfully implementing such personalized messaging is challenging. Fortunately, Ab Initio's Customer Interactions Platform makes it actually possible to evaluate customer actions in real-time in the context of existing data and craft individualized messages to each customer. With Ab Initio, CSPs can retain current customers, attract new customers, and dramatically increase revenue.

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Should I Stay Or Should I Go Now?

Communications service providers (CSPs) are all playing the retention game: How do you prevent customers from switching to another provider? Keeping existing customers is cheaper than attracting new ones, yet the old mechanisms for retaining customers are less and less effective. For example, in some countries cell phone contracts might help retention, but the increasing ease of getting an unlocked phone at an affordable price is undermining this strategy. In other countries, the ability to easily swap SIM cards means that customers can hop from one provider to another at will. Making matters worse, CSPs can easily appear interchangeable; any perk offered by one is quickly duplicated by the competition. Competing purely on price is a race to the bottom.

A simple way of keeping customers is to provide high levels of customer responsiveness: engaging customers with individualized rewards, timely offers, bonuses, and protective actions. Rapid, personalized responses cause customers to feel valued by their CSP in a way that generic responses do not. Moreover, when a customer's behavior triggers an immediate response, it has the potential to give the customer a strong feeling of being in control. Feelings of control increase customer loyalty.

Making It Personal(ized)

Personalizing a message to one person is simple. Personalizing messages to tens or hundreds of millions of people is not simple. The meaning of an action depends on context and customer history: A customer's hundredth text message of the day is important only if it represents a departure from the customer's normal behavior.

Evaluating an action in the context of a customer's history means capturing the action, associating it with the customer, looking up that customer's information, and rapidly deciding which responses, if any, are appropriate. The more data a CSP has about a customer, the more likely the CSP is to successfully deliver the appropriate response. A competitive CSP will therefore use every customer interaction as an opportunity to learn more about that customer; the goal is to understand the customer and that customer's unique relationship with the CSP. Insights from data enable the CSP to contextualize customer behavior: The CSP "knows" where the customer is coming from and where the customer is going. Past interactions enable the CSP to predict the best course of action for each interaction with the customer.

For example, if Luka Boyd is hiking along a trail while talking on her phone and the signal drops out, the CSP needs to recognize that this event just occurred. If this is Luka's first signal loss, perhaps no further action is required. But if, after checking Luka's history, the CSP learns that it is the third time this week or fifth time this month that she has experienced dropped calls, the CSP could immediately text her an apology and inform her that a credit is being issued on her bill. Similarly, if Bruce Wade Hughes calls to complain that he's having trouble streaming a concert, the CSP's customer interaction system should have identified the problem by the time Bruce actually starts speaking to Customer Support. An immediate response that is relevant, contextual, and consistent with previous interactions will generate positive feelings in the recipient, thereby increasing that customer's loyalty to the CSP.

Changing the Customer Interaction Paradigm

Historically, CSPs have communicated with customers through broad-swath market segmentation, large-scale marketing campaigns, and timed follow-ups. These approaches group people into large pools and then initiate actions against an entire pool. Rewards or bonus offers and the like often arrive long after the triggering event. At best, the behavior the CSP wants to reward is long forgotten, eliminating the chances of building a customer's sense of connection and loyalty; at worst, the CSP's communication arrives too late, after the customer has already made and acted on a decision, independent of the current offer.

This sort of communication – too little, too late, and too impersonal – is just the sort of approach that makes customers open to switching CSPs.

Today, thanks to digital technologies, all of that is changing. Using a real-time customer interaction system, a CSP can build loyalty by:

- Reaching out to customers with proactive service, timely advice, and protective actions. The message is one of helping, not selling.
- Targeting microsegments, including segments of one. These microsegments can be dynamically determined and continuously re-evaluated.
- Tailoring messages to best fit each communication channel the customer uses.
- Maintaining message consistency across all channels.
- Implementing campaigns quickly, in days rather than weeks, and adjusting those campaigns based on continuous data analysis.
- Running multiple concurrent campaigns even within a single microsegment.
- Using real-time data to decide when to scale up successful campaigns or to reduce or eliminate unsuccessful campaigns.

A competitive CSP makes use of existing customer data and continually supplements it with real-time data from customers' mobile devices. With this strategy, the CSP can deliver to each customer the right message at the right time and in the most effective way possible to produce the desired response. By managing customer interactions in real-time, the CSP can seize the competitive advantage.

Success Criteria for a Real-Time Marketing Platform

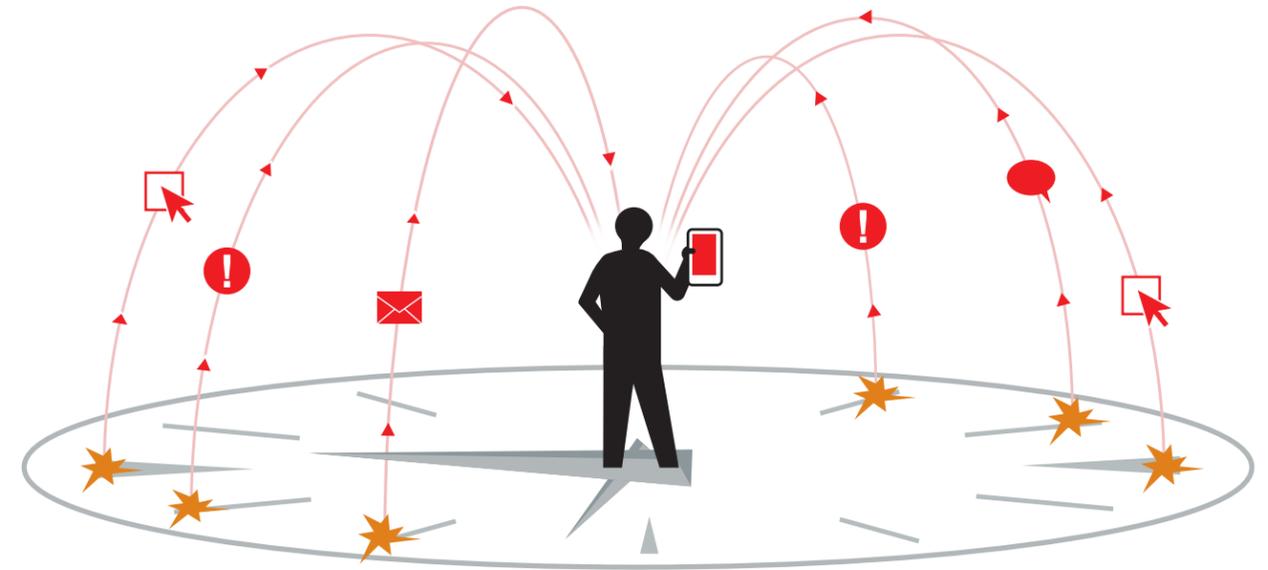
It is a significant undertaking to develop a framework for a scalable real-time marketing platform capable of responding to millions of customers across an arbitrary number of communication channels. Data must be pulled from different locations and in different formats. System capacity and scalability have to be planned. An operational process is needed that enables easy development of business rules and rapid time to market. Campaign management must account for multiple concurrent and often competing campaigns. The far-reaching effects of different technology choices must be understood. To be effective, a real-time marketing platform needs to do all of the following:

- Communicate in real-time with potentially hundreds of millions of customers.
- Quickly gather customer data scattered across multiple databases, web logs, mainframe datastores, XML and JSON documents, and other record formats.
- Quickly integrate that information in order to form a single consistent image of the customer's experience to date.
- Empower business experts to create and monitor service and marketing campaigns, and to specify rules for detecting business events and for making and monitoring target offerings.
- Integrate with legacy products and digital channel technologies without compromising existing performance and reliability SLAs.

- Accelerate time to market and be able to respond quickly to market changes.
- Provide true omni-channel communication capabilities.
- Scale to changing performance requirements in a way that is cost efficient, predictable, and linear.
- Provide continuous feedback through business and operational dashboards to track which campaigns are running, what the campaigns' KPIs are, how many events of what type have been processed, what offers have been made, what offers have been accepted, and what the technical execution status is of system queues, file systems, and any issues affecting fulfillment.
- Integrate with machine-learning and predictive analytics technologies.

It is certainly possible to build a real-time marketing platform from scratch or from existing real-time interaction management (RTIM) and multi-channel campaign management (MCCM) suites. However, building from scratch requires reinventing the wheel, with all the problems inherent to software development. In addition, because many of the RTIM and MCCM suites are assembled from disparate technologies, building from existing suites will also inevitably entail significant development delays, headaches, and unexpected incompatibilities.

Fortunately, there is a better way.



Ab Initio: A Better Way

Over twenty years ago, Ab Initio revolutionized data processing for big data with its high-productivity, high-performance graphical programming platform. Ab Initio's robust low-latency technology, used by many of the world's largest companies for their mission-critical applications, provides a solid framework for real-time customer interaction management.

Ab Initio's Customer Interactions Platform (CIP) software can accept and process data continuously at any scale to practically any service-level requirement. As it reads data, CIP triggers appropriate actions based on that data. Business analysts can easily define complex rules to act on a variety of events as well as non-events. Using CIP, analysts can create and launch campaigns of any sort, from purely informational to marketing. CIP can also be integrated with machine-learning and predictive analytics packages to tailor individualized messages to customers on the most appropriate communications channel. Each step can be logged – for example, the reason an offer was made, the type of offer, the messaging the offer included, and the customer's response.

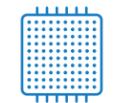
Benefits of the Ab Initio Approach

Ab Initio approaches problems from first principles: The goal is to produce a solution, not a Band-Aid. Ab Initio software is designed to handle big data problems, making it possible to deliver solutions to market in a fraction of the time, and with a fraction of the programming staff, required by traditional software development approaches.

For Ab Initio customers, the benefits are significant:



The ability to respond in real-time to billions of events per day with full historical context for each customer



The ability to process in real-time tens of millions of concurrent messages per day



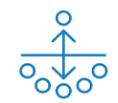
True omni-channel capabilities: SMS, USSD, mobile apps, the Web, IVR, email, and more



The ability to run multi-stage campaigns with unlimited campaign routes



The ability to run campaigns that range in duration from minutes to months



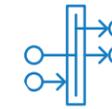
The ability to focus a campaign on one person or on a broad segment of the population



Integration with machine-learning and predictive analytics technologies



The ability to support real-time, adaptive decision making



The ability to create, initiate, and halt many concurrent event-based marketing campaigns



Full metadata capture, allowing for data lineage and data governance



Extensive data quality capabilities



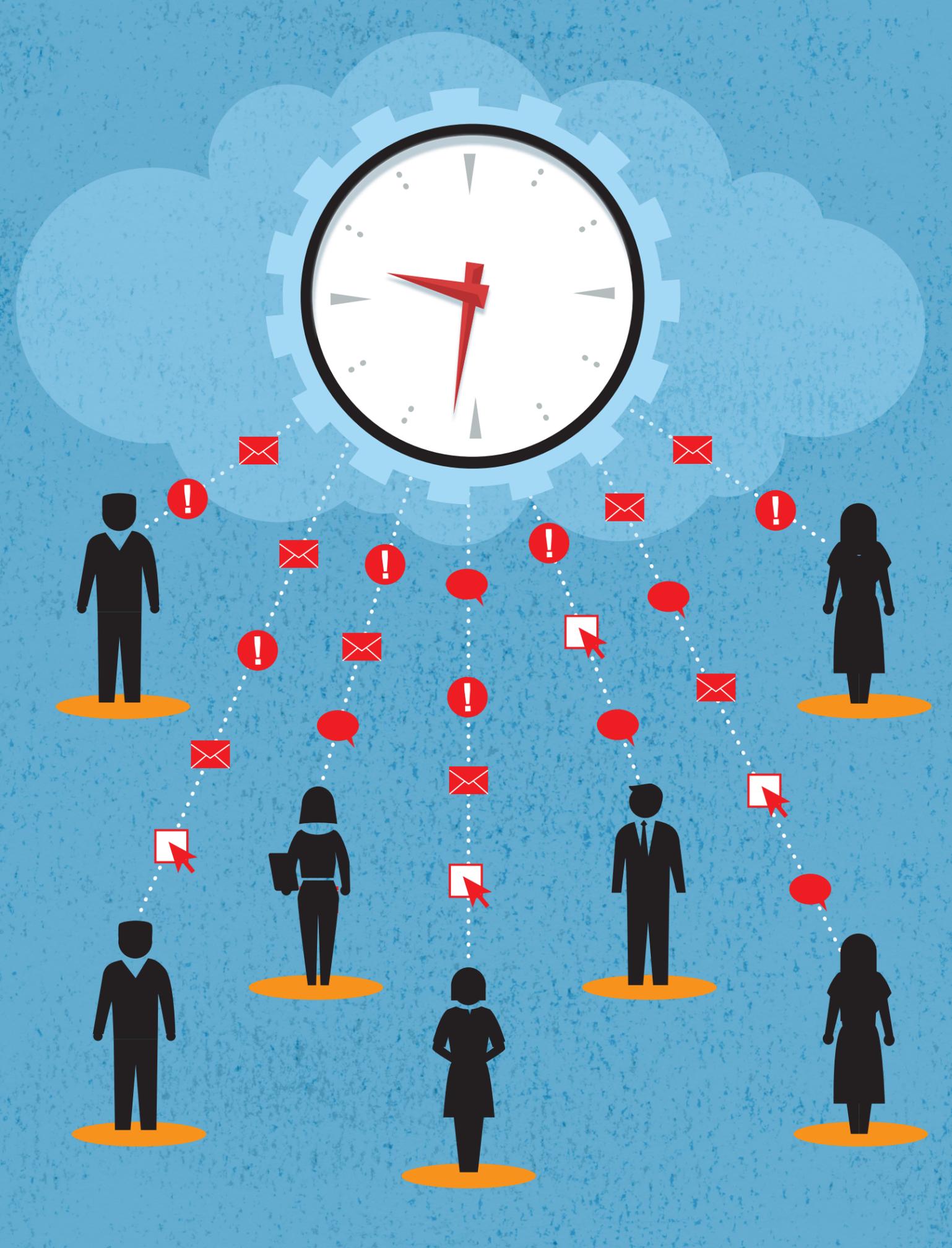
The ability to read and write any datastore on a variety of platforms, including Windows, Unix/Linux, Hadoop, Cloud Services (AWS, Azure, Google, etc.), and mainframe z/OS



Complete scalability, which means the ability to meet increasing demand by simply adding more commodity servers



An extremely stable, robust technology that shields users from the frustrations of a mixed development environment, including those particularly irritating bugs that result from subtle incompatibilities between tools, or inconsistencies in data representation between different programming languages



Case Study

If at first you don't succeed, pretty soon you start losing market share. That's what was happening to one major CSP. Each quarter they lost subscribers and revenue until they fell behind their biggest competitor. Their solution to this downward slide was to try to become more customer-centric by capitalizing on the digital transformation and building a real-time customer interaction system. Their goal was to respond to their tens of millions of customers in real-time, meeting customer needs, addressing customer problems, preventing fraud, and engaging in customized marketing.

It was a great idea. Unfortunately, their first attempt didn't work. Neither did their second nor their subsequent attempts. Every attempted solution failed on speed, required capabilities, or both. Things were looking bleak when the CSP spoke to a global provider of technical services and computer hardware. After that, things looked even bleaker.

They were able to rapidly collect customer data, feed that data to machine-learning algorithms, and respond in real-time to customer actions.

Then the CSP decided to work with Ab Initio.

The collaboration with Ab Initio marked the beginning of the turnaround. Ab Initio's Customer Interactions Platform made it possible for the CSP to build exactly what they wanted. They developed a real-time analytic system that gave them everything they needed, and they built features that they had not previously believed were even possible. They were able to rapidly collect customer data, feed that data to machine-learning algorithms, and respond in real-time to customer actions. Customer service improved dramatically as the CSP used Ab Initio technology to power both their marketing efforts and their customer interaction services.

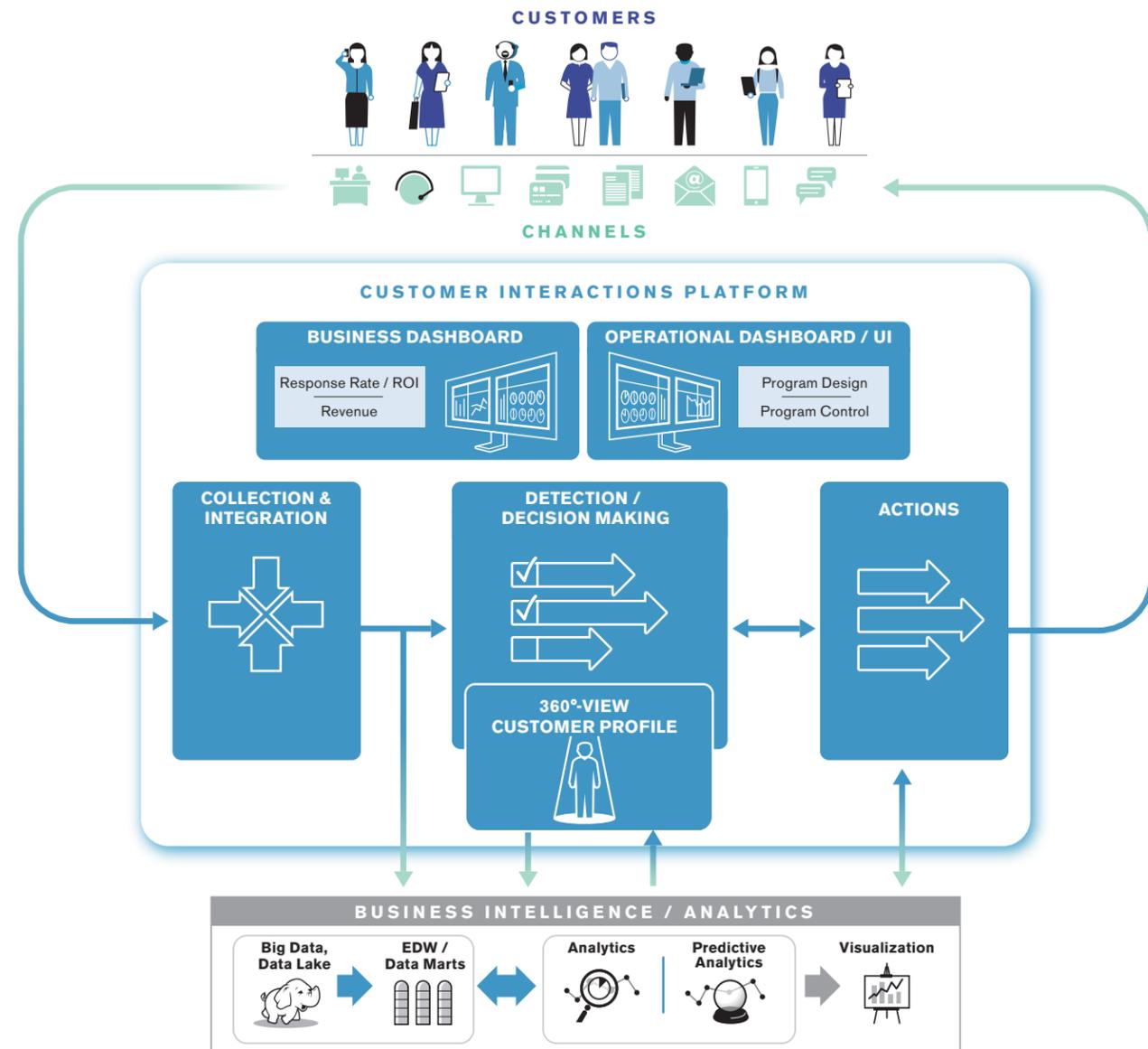
Within months, Ab Initio had enabled the CSP to manage tens of millions of subscribers generating billions of events per day. The CSP was now launching thousands of campaigns a month (all of them integrated with machine-learning technologies) and fulfilling tens of millions of offers across multiple channels and fulfillment services.

After a year of losses, the CSP was now showing positive revenue. Best of all, the competitor who had overtaken them was now far behind.

Results like these are not unusual with Ab Initio.

Ab Initio Technology

Ab Initio's Customer Interactions Platform is part of Ab Initio's fully integrated technology stack.



CIP consists of four key components and a fifth optional component:



Detect The Detect component implements the complex business logic that is at the heart of understanding customer interactions. Real-time data is gathered as events, which are then combined with cached customer data and processed according to analyst-developed business rules. Ab Initio software can process rules of any complexity and can also integrate with machine-learning and predictive analytics packages for fully adaptive decision-making.



Act The Act component executes the results of the decision logic in Detect. For instance, this component might initiate actions to issue instructions to a fulfillment service, or record a customer reaction to an offer.



Real-Time Customer Profile This fault-tolerant in-memory component maintains up-to-the-minute information about each customer. As customer interactions are detected by Detect and actions triggered by Act, this component constantly updates the customer profile.



Business and Operational Dashboards The dashboards have business pages that present and control the business function of CIP: what campaigns are running, the campaigns' current relevant KPIs, campaign lifecycle stages, and so on. The dashboards also have operational pages that present the state of each CIP component while it is running.



Collect The optional Collect component gathers data from virtually any source, including websites, social media feeds, mobile devices, and other digital technologies. No coding is required; business analysts use Ab Initio's intuitive interface to develop rules that will read in data in its native format from anywhere across the enterprise. Structured or semi-structured data sources can be added in hours or days, as compared with weeks or months using traditional approaches. Customers can use Ab Initio's default Collect component or their own custom technology.

CIP supports a variety of outbound campaigns, which initiate contact with customers:



Informational Informational campaigns send messages to eligible subscribers but have no associated benefit.



Reply In Reply campaigns, eligible subscribers must reply with a keyword to accept an offer and be granted a benefit.



Push In Push campaigns, all eligible subscribers receive a benefit and are informed of the reward. No offer is made, and no action is required.



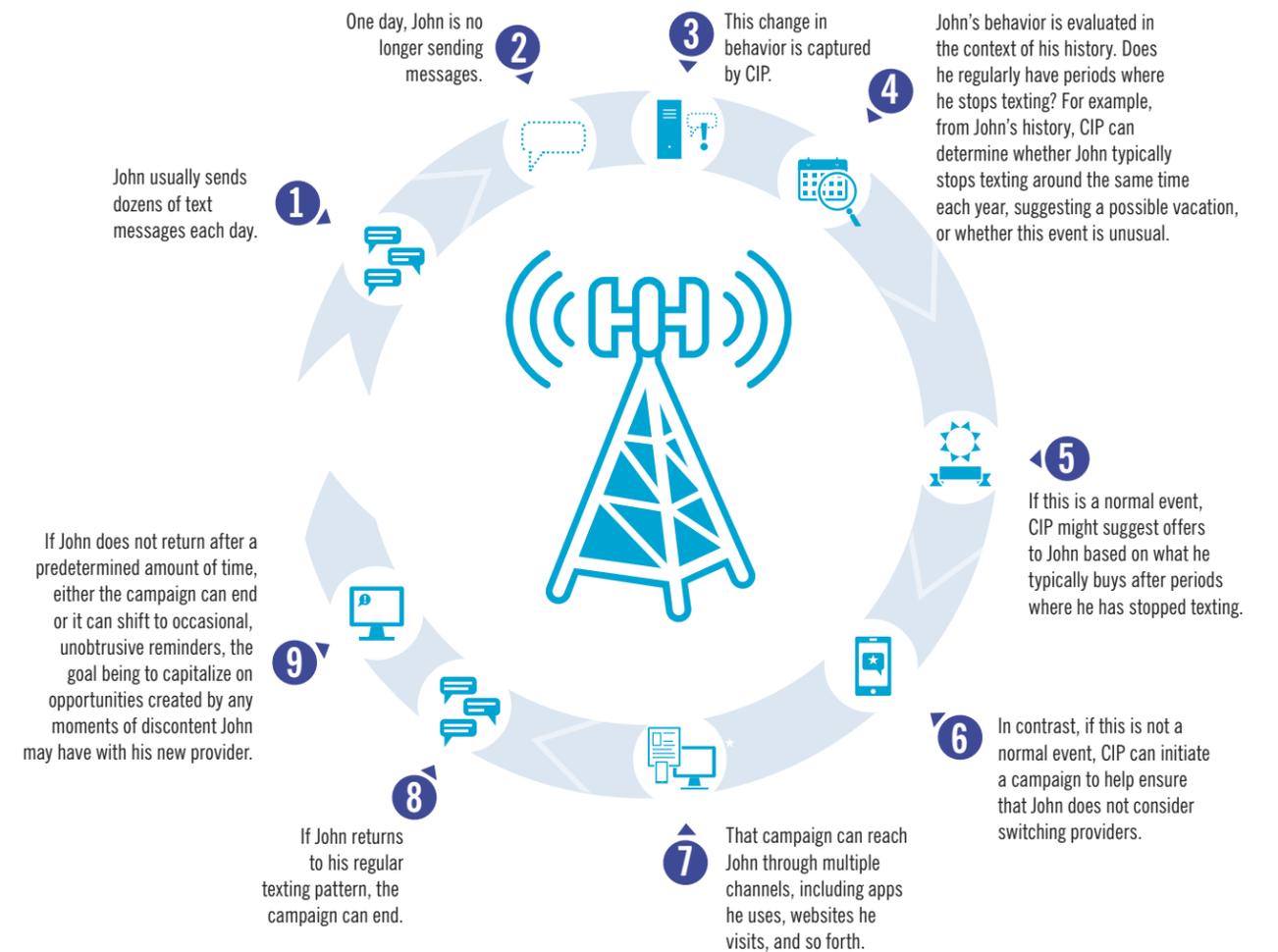
Event In Event campaigns, all eligible subscribers receive an offer; they then have to perform an action in order to be granted the benefit.

CIP also supports inbound campaigns, which are offers made to customers when they initiate communication, such as by visiting the CSP's website. Inbound campaigns are supported across configured inbound channels via the "Next Best Offer" service. Offers can be configured in the Next Best Offer service by human configuration alone or in combination with machine-learning, algorithmic, predictive, or statistical models.

Understanding the Customer Journey

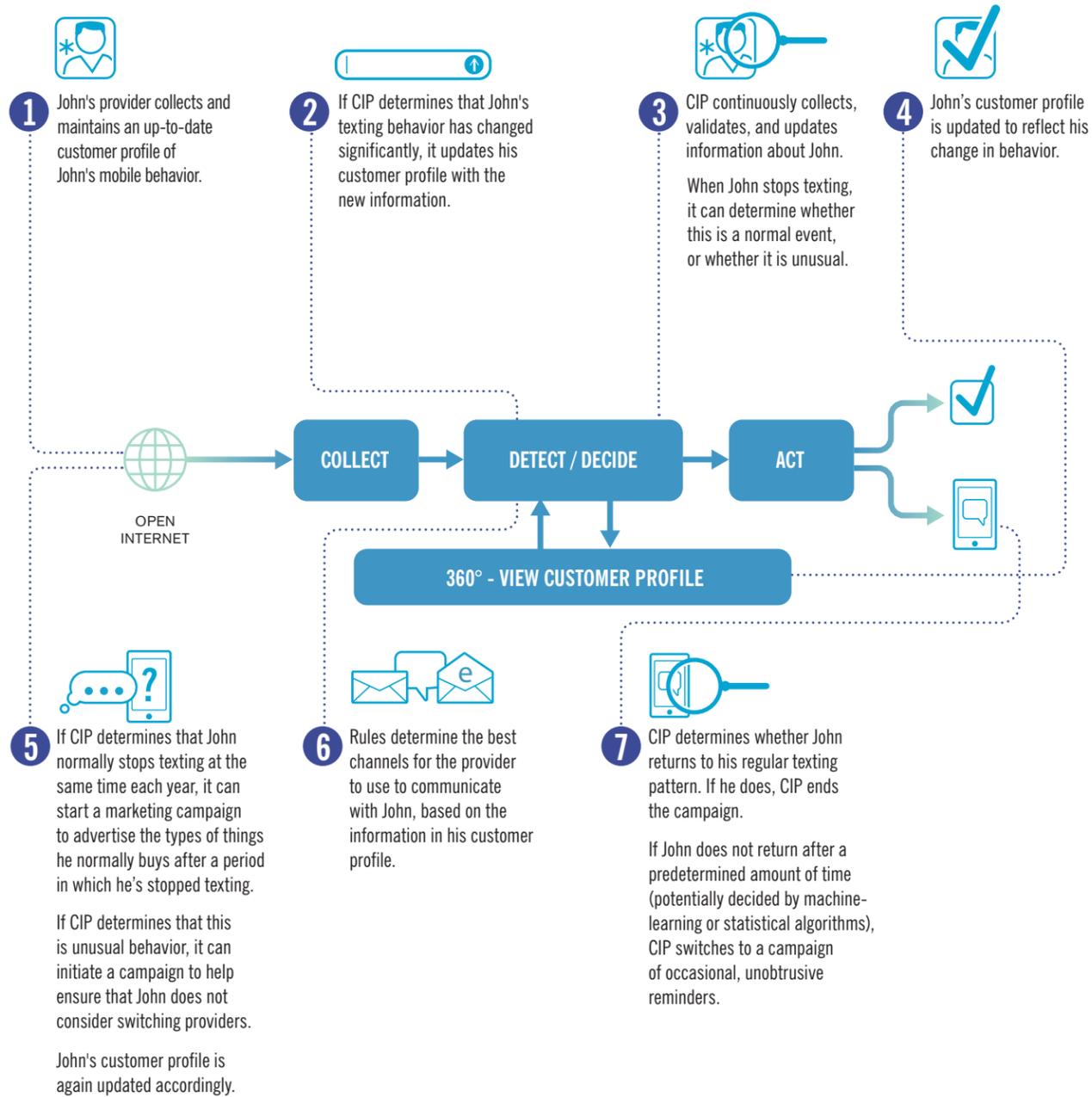
The easiest way to understand the Customer Interactions Platform is by following the journey of a hypothetical customer, John.

John's Telco Journey



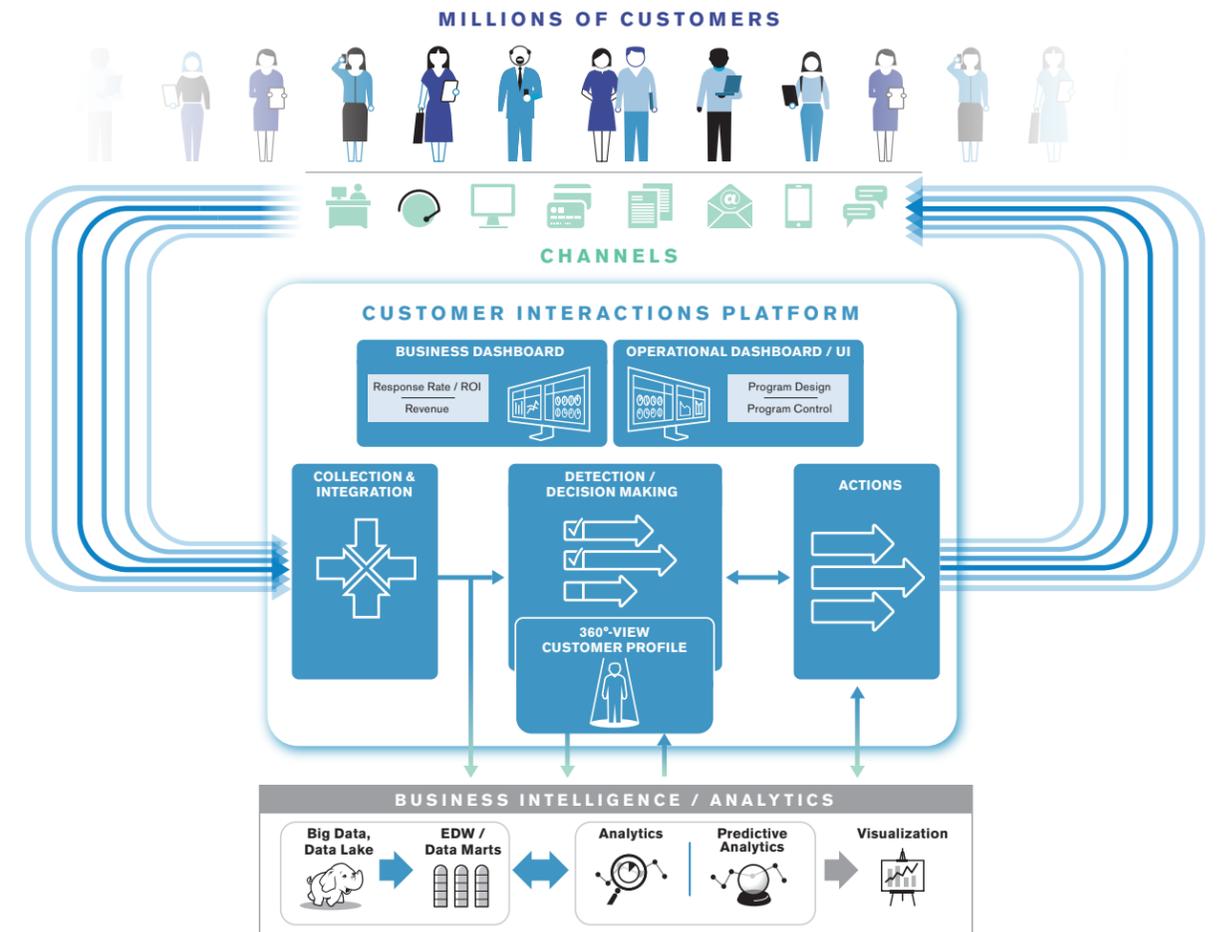
From John's perspective, the entire process has been relatively invisible. Under the surface, however, quite a lot is going on. John's journey is actually the result of Ab Initio technology operating behind the scenes to identify his needs and act to meet them.

John's Telco Journey, Behind the Scenes



Of course, John is only one person. Because CIP runs on Ab Initio's Co>Operating System, it can handle not just John's data, but also that of millions of other people, all in near real-time.

Customer Journeys



With CIP, developing and adding new campaigns is remarkably simple. The platform does most of the work. Relatively few custom components are needed, and even developing those is straightforward with Ab Initio's highly intuitive graphical development model. New data feeds and new rules can be added in hours or days, as opposed to weeks or months, and, once added, can be reused with no additional effort. With Ab Initio, CSPs can leverage their data and customer connections as never before, and they can do it in a fraction of the time required by other software engineering approaches.

World-Class Support

Ab Initio understands that systems that manage and respond to customers interactively need to be in continuous operation. With Ab Initio, businesses never need to go it alone.

In addition to providing extraordinarily powerful software and extensive documentation, Ab Initio also offers world-class support for mission-critical applications. With our support organization staffed by avid problem solvers with advanced technical degrees, we provide the same degree of engineering talent and product expertise in our global support team as we do in our field consulting group.

Summary

Interactions that are too little, too late, and too impersonal are the bane of communications service providers seeking to keep their customers. Retaining current customers and attracting new customers require that CSPs interact with customers in real-time with context-aware, personalized communications. Providing that level of contact requires a platform that is capable of simultaneously capturing hundreds of millions of customer actions, that uses a combination of rules and predictive analytics to process those actions within the context of each customer's history, and that then generates personalized responses and appropriate actions in real-time.

Ab Initio's massively scalable, fully integrated graphical data processing environment and Customer Interactions Platform enable CSPs to rapidly build a system that can generate personalized responses in real-time to each of hundreds of millions of customers generating billions of events each day – thereby providing customers with just the right number of personalized, timely interactions. With Ab Initio, CSPs can escape the “too little, too late, too impersonal” trap and build customer loyalty faster and more powerfully than ever before.



Learn More

To find out more about how Ab Initio can help you leverage your customer data for competitive advantage, contact us:

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