At both strategic and tactical levels, the ability to access customer data in a timely, cost-effective way can be a challenge. Financial institutions and payment processors are now dealing with enormous volumes of transaction “Big Data” that needs to be gathered over sprawling, multi-vendor network and application infrastructures. These transactions are often routed through a variety of service and fraud applications, adding another level of complexity when it comes to gathering customer data.

Traditionally, business leads and channel managers have lacked on-demand data access and have had to rely on their operations team to spend many expensive, time consuming hours gathering and piecing together fragmented data collected from multiple sources – many of which are unreliable. These traditional data collection and storage issues surrounding transaction data have greatly impacted the ability of retail banks to produce dynamic dashboards and customer analytics reports without long lead times- often up to 6 weeks when all the data is finally in a “ready to analyze” state.
Overview

The INETCO Analytics® software application represents a highly optimized solution that makes it easy for business leads, channel managers and operations teams to gain on-demand access to data that shows how customers use self-service devices and other digital banking applications. It is an easy way to see your wealth of customer engagement data – ready to be analyzed any time you need it.

Combining best of breed solution architecture components such as INETCO Insight, Tableau and Hadoop, INETCO Analytics is a tailored analytics offering for financial institutions that simplifies the way digital data is collected, stored and visualized across multi-channel banking environments. With a visual display into robust transaction data and other complementary data feeds, financial institutions can identify new ways to acquire customers, deliver more value to existing ones, and enhance profitability through faster reporting, better device placement and targeted service offerings. You can also move one step closer to delivering a true omnichannel banking experience by ensuring customers can complete their transactions as expected, across all your channels.

This product overview will explain how the INETCO Analytics on-demand customer analytics solution works, and why this software will help your organization get more value from your customer engagement data.
Summary of INETCO Analytics benefits

Every transaction tells a story. And this is proven with INETCO Analytics. This self-serve, analytical application shows how customers interact through your various retail banking channels, including visibility into:

- Demographics
- Customer densities
- Customer engagement
- Partner locations
- Competitor device locations
- Device placement (ATM, POS)
- Fleet profitability
- Performance by device type
- Cash utilization and replenishment
- Failure/outage impacts

INETCO Analytics makes it easy to collect a wealth of customer data – ready to be analyzed at any time, by anyone. In addition to structured transaction data (including transaction types, revenue mix, volumes and dollar amounts) that is updated on an hourly or daily basis, INETCO Analytics can ingest other data sets and host algorithms to help improve the quality of on-demand reporting, predictive analysis and ad hoc queries.
Use INETCO Analytics to help you:

**Understand your customers**
- Access rich records of every consumer interaction
- Spot your top customers and acquisition opportunities
- Utilize built-in algorithms for queues, wait times and transaction sequences

**Adopt data-driven customer engagement strategies**
- Analyze profitability by channel, device segment and down to individual self-service locations
- Improve the placement and service offerings of various devices and banking applications
- Migrate users to appropriate channels based on their usage

**Speed up your reporting cycles**
- Perform on-demand reporting and ad hoc queries
- Continuously update and refresh your customer transaction data
- Blend transaction data with complementary data such as BIN ranges, demographics or competitive information

**Examples of reported time savings with INETCO Analytics:**

<table>
<thead>
<tr>
<th>REPORTING &amp; ANALYTICS</th>
<th>CURRENT TIME</th>
<th>PROJECTED TIME SAVINGS</th>
<th>ACTUAL TIME WITH INETCO ANALYTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Ad Hoc Requests</td>
<td>1-2 hrs</td>
<td>50-88%</td>
<td>15-30 mins</td>
</tr>
<tr>
<td>Member Inquiry/Requests</td>
<td>30 mins</td>
<td>50%</td>
<td>15 mins</td>
</tr>
<tr>
<td>Geographical Channel Analysis</td>
<td>3+ mths - manual data gathering and analysis</td>
<td>67%</td>
<td>Projected 1 mth - data gathering &amp; analysis</td>
</tr>
<tr>
<td>Building Branch-Specific Dashboards</td>
<td>N/A</td>
<td>N/A</td>
<td>15 mins</td>
</tr>
<tr>
<td>Overall Dashboard Efficiencies</td>
<td>4 hrs input time &amp; 1.5 hrs of analysis &amp; 2+ wks prep/data availability</td>
<td>97%</td>
<td>Projected 2.5 hrs combined input &amp; analysis &amp; improved delivery time of 2 wks</td>
</tr>
<tr>
<td>Add or Place ATM Analysis</td>
<td>8-10 hrs</td>
<td>60-75%</td>
<td>2-4 hrs</td>
</tr>
<tr>
<td>Renewing an ATM Lease Decision</td>
<td>4 hrs</td>
<td>75-88%</td>
<td>30-60 mins</td>
</tr>
<tr>
<td>Cash Utilization</td>
<td>8-9 hrs per week</td>
<td>88%</td>
<td>Projected 1 hr per wk</td>
</tr>
<tr>
<td>Determine ATM Queues at Individual ATMs or Channel Level</td>
<td>N/A</td>
<td>N/A</td>
<td>15 mins for individual query</td>
</tr>
</tbody>
</table>
The INETCO Analytics architecture

In the following subsections, we review the architectural components of INETCO Analytics and some of the key benefits associated with this type of design and architecture. The key components are identified below:

- **Data Subscriber** - Connect to various sources
- **Analytics Engine** - Algorithms and data transformations
- **Core Data Manager & Scalable Data Cluster** - Enable future-proof scaling of your data collection
- **Visualization Server** - Provide diverse data access to anyone in your organization, anywhere

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“...Bank systems were designed to secure and store data, rather than share and use it. Control of the data is still required but banks need to find better ways to work with it. If done after the fact, analytics are simply historical enquiry. But executed in real-time, they can positively affect a transaction as it happens. Improving analytics will broaden the range of services banks can offer their customers and increase revenue opportunities.”

GARETH LODGE, SENIOR ANALYST – CELENT BANKING GROUP
Integrating data feeds with the Data Subscriber

INETCO Analytics contains a robust data subscription engine that allows for easy ingestion and blending of various data sources. Blended tables and data feeds can include information such as population density, competitive intelligence, BIN lists, device information, demographic information, and of course, transaction data.

The primary data feed for INETCO Analytics is typically the transaction data continuously streamed from the INETCO Insight® real-time transaction monitoring platform. INETCO Insight was built to handle streaming Big Data, easily monitoring any and all types of customer interactions happening within multi-channel retail banking networks. Protocol and platform agnostic, this software platform captures and correlates real-time consumer transaction data in a secure, light-weight fashion, enabling financial institutions to overcome past data mining limitations and avoid high cost, manual data collection and correlation tasks.

Using a secure protocol, transaction data is pulled directly off the network in real-time which ensures timeliness, accuracy and integrity. With a “bottoms up” view of your network traffic, real-time transaction data can be gathered and correlated with lower implementation costs than ever before:

- Without having to instrument applications and deal with traffic load, flow or debugging issues
- Without having to spend hours sorting through log data
- Without impacting the electronic payment systems and applications running within your multi-channel banking environment

INETCO Analytics collects, stores and maintains data feeds in a single data source for their entire life cycle through the Data Subscriber. Ensuring data lineage is well defined, controlled and maintained can also greatly reduce the need to regularly clean, maintain and monitor the evolution of your data. Automated cleansing algorithms within INETCO Analytics can add another level of integrity to data that will be used for critical business decisions.

Why transaction data, why now?

In any retail banking environment, digital transactions flow 24 hours a day, 7 days a week. All the transactions that begin at your ATMs, POS devices, online and mobile applications as well as the physical branch, provide a goldmine of information on both operational performance and the end customer experience. With this data, operations teams can understand how applications, networks and your third party service providers relate to payment and service performance. Transaction data can also be used by business leads and channel managers to determine how to improve customer retention, increase acquisition and deliver greater profitability across multi-channel banking environments.
Vertical-specific analytics and predictive algorithms with the Analytics Engine

More and more organizations want analytics and predictive algorithms that are aligned with their industry and problems in mind. For example, an ATM channel manager will have different business and forecasting goals than that of someone responsible for the POS, Mobile, Branch or Internet Banking channels. Even as we undergo branch transformation and move towards omnichannel banking environments, it will be important to consider how financial institutions can drive the profitability and customer service value within each individual self-service channel.

INETCO Analytics has the ability to run simple to complex algorithms that identify patterns, trends and predictions. The software contains built-in algorithms to understand things such as queue lengths, cash flow forecasting by self-service device, and customer interactions by session. It also contains interactive dashboards and a standard report library, specifically built for payment system overviews and for understanding what is going on within individual self-service banking channels. These dashboards and reports leverage deep, vertical-specific industry knowledge and will help business leads and channel managers analyze:

- Channel or fleet profitability
- Customer interactions
- Self-service device placement (ATM, POS)
- Performance by device type or format
- Cash utilization and replenishment
- Failure/outrigger impacts
- Task times and flows

SCREEN CAPTURE 2: Drag and drop to create a one-stop dashboard overview into fleet performance. See information such as member density, partner locations, queue lengths, average transaction volumes and top performing ATMs by format.
Highly scalable data storage with the Core Data Manager and Scalable Data Cluster

SCREEN CAPTURE 3: Maximize the profitability of every location by understanding transaction volumes, revenue composition, queue lengths and transaction amounts.

The speed by which data is being accumulated makes it extremely hard to maintain and clean. This is why we recommend there should be only ONE integrated, master data set. For scalable data storage, INETCO Analytics uses Cloudera Hadoop. Hadoop was created for the distributed storage and distributed processing of very large data sets on computer clusters built from commodity hardware. Some of the main benefits of using Hadoop include:

- **Scalable** – Hadoop is a highly scalable storage platform because it is built on clusters of servers. As more storage is required, the cluster can be grown to provide more storage and more processing. Rather than being locked to a single server, a Hadoop cluster can grow to thousands of nodes and run zettabytes of data.

- **Cost effective** – Due to the inherent architecture in Hadoop and leveraging distributed commodity hardware, it has essentially reduced the cost of storage by a factor of 100. In the past, the cost of storage traditionally became a business concern and regularly resulted in only summarized data being stored. Hadoop removes that expense and means that all your granular data can be stored indefinitely.
• **Flexible** – Hadoop enables easy access to both structured and unstructured data sources. As a result, organizations can start to incorporate data from exploding sources such as social media channels, metatags and advertising information, opening up a myriad of new purposes for the data.

• **Fast** – Given Hadoop’s design, it has the ability to find data quickly and map to it wherever it may be. Distributed processing capabilities mean that the inexpensive computing that houses that particular data will also have the tools and capacity to process the data much faster than a centralized approach. The power of distributed computing results in scalable data storage delivered with scalable processing.

• **Resilient** – Fault tolerance is inherent in the Hadoop architecture. Data is not only distributed throughout the cluster, but it is also replicated for disaster recovery in the event of a failure. As the cluster grows, this provides data protection from both single and multiple simultaneous failure events.

Finally, given the massive movement in the open-source community, there are new tools all the time that improve the Hadoop ecosystem. With the growing need for highly optimized access to data, these advantages are only going to improve.

“...Gaining (general consumer financial) insights has traditionally been a big IT job – it required the creation of data warehouses, the wrangling of some pretty intense analytics querying solutions and a bunch of technicians to make it all work. INETCO is trying to collapse that all into a single product...Vertical specific analytics is going to be a big trend in 2015. INETCO is offering the banking sector something valuable here.”

BEN KEPES, FORBES CONTRIBUTOR
(http://www.forbes.com/sites/benkepes/2015/01/15/more-vertical-analytics-solutions-inetco-goes-analytical-on-atm-data/)
On-demand, organization-wide access to your data through the Visualization Server

According to “The Forrester Wave™: Agile Business Intelligence Platforms, Q3 2015” by Boris Evelson, business user self-service is the key differentiator in the agile business intelligence market:

“As enterprise business intelligence driven by technology management becomes commoditized, features that empower business users to be self-sufficient will differentiate software providers. Vendors that can deliver business user self-service features without sacrificing essential enterprise capabilities will position themselves to deliver the best business intelligence platforms to their customers.”
To become data-driven in all aspects of decision making, you need to think about how you can empower business users to be self-sufficient. Creating easy, organization-wide access to your data in a timely, cost-effective way is a good way to help drive data-driven decision making at all levels. That is why INETCO Analytics uses Tableau as its visualization server, a proven leader in the visualization platforms space.

Tableau continues to drive forward the principles of highly optimized analytics and visualization by being on the forefront of delivering products that are:

- **Easier to use** – Tableau has strived to deliver analytics for real business data and real business users. They pride themselves on the single click operation, leveraging the users’ ability to recognize trends and patterns in a simple and intuitive way. Every member of an organization can become data-driven with this mindset.

- **Fast interactive visualization** – Tableau translates pictures of data into optimized database queries, making the ideation, analysis and visualization meld into one fluid, interactive activity. In addition, Tableau’s fast data engine and in-memory architecture means that the analytics become a seamless activity.

- **Accessible to everyone** – Regardless of where the analytics is done and the stories and dashboards created, Tableau boasts robust file sharing to Tableau readers, server interactive, online web publishing and mobile distribution. This makes the power of the data accessible to everyone in your organization.

- **Simple to integrate with existing systems** – Tableau provides over 40 data connections to various systems from Cloud-based sources to personal data files on existing systems.

Other benefits that Tableau boasts can be reviewed at [www.tableau.com](http://www.tableau.com) and include aspects such as:

- Visual analysis in a click
- Deep statistics
- Metadata management
- Best practices built in
- Data engine
- Mapping
Conclusion: So why INETCO Analytics?

The best results from customer engagement analytics are when you combine the right data, technology and people to get the most insight. Data in the hands of every level of the organization, from executives to field personnel, extends the distributed paradigm of storage and processing to include distributed analytics and distributed value. Investing in a solution architecture that combines best of breed technology means you can instantly access all the interactive data you need to perform more efficient queries, data aggregation and structuring.

INETCO Analytics is a highly optimized solution that provides on-demand, access to billions of rows of customer engagement data. It leverages collaborative technologies that will result in more analytically connected people. This means you can now build an organization that yields a data-driven culture that will help you to identify new ways to acquire customers, deliver more value to existing ones, and enhance profitability through faster reporting, better device placement and targeted service offerings.

“A growing number of financial institutions are realizing significant results from vertically focused analytics solutions designed to address specific use cases. INETCO Analytics is one such example.”

BOB MEARA, SENIOR ANALYST, CELENT’S BANKING PRACTICE
Key INETCO Analytics features include:

**Highly optimized solution architecture** – Combine best of breed technologies to gain optimal performance when it comes to querying, aggregating and structuring all the data that you need for interactive analytics, rather than being limited to sampling or collecting data over a shorter time frame.

**Library of “out-of-the-box” dashboards and reports** – Leverage deep, channel-specific knowledge to visually identify new ways to acquire customers, deliver more value to existing ones, and enhance profitability through faster reporting, better device placement and targeted service offerings.

(Note: INETCO’s experienced team of professional services is also available to help build out customized dashboards and reports)

**On-demand reporting and ad hoc query capabilities** – Transaction data is continuously updated within INETCO Analytics to enable fast access to the latest customer engagement information and profitability updates by card type, service type, channel, device segment and individual self-service locations.

**Built-in data lineage algorithms** – Use cleansing algorithms to ensure data lineage is well defined, controlled and maintained to greatly reduce the need to regularly clean, maintain and monitor the evolution of your data.

**Robust data subscription engine** – Easily ingest and blend various data sources such as population density, competitive intelligence, BIN lists, device information, demographic information and rich transaction data from INETCO Insight.

**Vertical-specific analytics engine** – Apply simple to complex, industry-specific algorithms and predictive modelling to quickly understand patterns, trends and predictions such as queue lengths, cash flow forecasting by self-service device and customer interactions by session.

**Highly scalable, cost effective data storage** – Manage one integrated, master data set within a Cloudera Hadoop scalable data cluster and reduce the cost of storage by a factor of 100; benefit from the scalability, flexibility, speed and fault tolerance inherent in the Hadoop architecture; take advantage of the growing open-source community that is continuously improving the Hadoop ecosystem.

**Leading edge visualization** – Create easy, organization-wide access to your data in a timely, cost-effective way through a Tableau visualization server; optimize queries and visualize data trends and patterns within a single click; share this data to Tableau readers, server interactive, online web publishing and mobile distribution.
Finally, we would like to leave you with some cultural things to consider as you embark on your journey into customer engagement:

- **Be ready to think in new ways** – A new data perspective requires a mind shift in the way you make business decisions
- **Clearly define what you wish to accomplish** - Purely collecting transaction data does not unleash its potential value
- **Start simple** - If insight derived from analytics is too complicated to produce or understand, business managers just won’t use it
- **On-demand data access is key** – Especially if you want to reduce dependencies, overhead and operational costs
- **Treat customer analytics as a journey; not a destination** – Choose vendors that are trustworthy and share the same vision

For more information on the INETCO Analytics product, contact analytics@inetco.com.