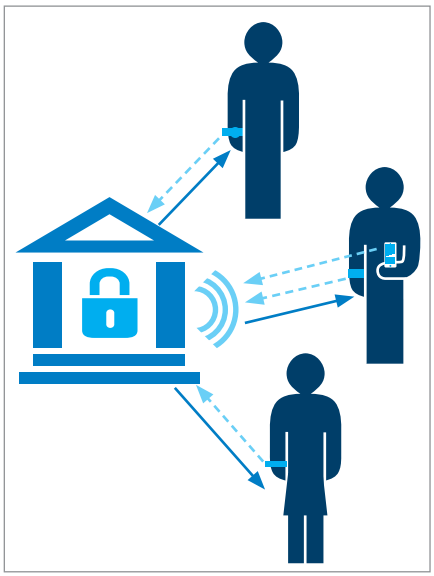
SOLUTION BRIEF

Data Management and Analytics
Financial Services

Reinventing the Insurance Customer Relationship through Wearable Technology

The COVALENCE™ Health Analytics Platform lets insurers use the benefits of big data to better serve customers and gain differentiated competitive advantage

Consumers have different needs and demands, and personalization will become more and more important as insurers adapt to a new digital world.



Executive Summary

In today's hypercompetitive insurance marketplace, insurance business leaders are looking for ways to set their organization apart from the competition. That brings up a key question: How do people choose among insurance companies—is it just based on price and premium, or is there more? The fact is that the rise of digital and the power of big data have led to consumer demand for more personalized products and an enhanced customer experience.

These changes offer a tremendous opportunity for insurance companies to transform the nature of the relationship they have with their customers. With wearable health monitoring bracelets and advanced analysis of the data obtained from those bracelets, insurers can create personalized offerings matched to the needs of each individual. The customer benefits in two ways:

- Right-sized offerings attuned to their lifestyle
- The ability to view their own health metrics in real time and summary form

Customers can enjoy an enhanced quality of life by using the personal metrics viewable on their wearable device as part of a wellness program. Insurers may also enable customers to gain premium discounting for the remaining life of a policy based on improved wellness scores. Companies can even set up a series of messages that automatically provide health coaching to individuals according to their metrics.

All this can add up to a transformative change in the way customers perceive the insurance company—as a positive element in their life rather than just a necessity. The insurer is seen as a company that really understands the customer through their data and is able to deliver better, personalized service. Improved activity and health can enable users to enjoy an increased quality of life through consistent wellness programs, and more broadly, foster a culture of well-being.

Using the data made available through wearable technology, insurance organizations can also attain key business goals, including:

- Increased customer loyalty
- Improved revenue growth
- Lower claims costs through improved underwriting
- Overall population health improvement

Insurance companies have an opportunity to better connect with customers and not only change the relationship, but also help change health outcomes with the services they provide. The solution described on the following pages is designed to enable those changes. Through use of wearable technology and advanced analytics, insurers can engage customers to change unhealthy habits, giving insurers the ability

BIGCLOUD analytics

to significantly affect the health and life expectancy of their insured, which can have a major impact on the timing and size of claims, and ultimately improve customers' quality of life and insurers' bottom lines.

Business Opportunities Provided by Wearable Technology

Insurance companies and their customers can realize many potential benefits from using big data (especially Internet of Things [IoT]-generated data) coming from wearable technology made usable by advanced analytics.

For customers. Improved activity and health can enable them to enjoy an increased quality of life through consistent wellness programs (which include wearable devices, advanced analytics, and data visualization), and more broadly, foster a culture of well-being.

Branding advantages. Using wearables in the insurer's marketing and sales strategies can:

- Be used to attract customers who are more health-conscious
- Increase customer loyalty through enhanced customer engagement (related to focus on habits)
- Strengthen insurers' brands as an innovative health-focused insurer

Improving existing customers' risk profiles. As customers become more active and healthy, they will require less overall health management and less time away from work, while benefiting from better productivity and longer life spans, thereby reducing insurers' claims and overall exposure to risk. With a focus on engaging existing customers about unhealthy habits, insurers now have a lever to improve claims and life expectancy.

Addressing privacy and security needs, and customer acceptance. One of the major cultural and human factors in adopting new technologies such as big data and IoT is security and privacy. Addressing this issue involves multiple factors, including:

- Using state-of-the-art data security (including encryption and anonymization technologies and effective data management governance).
- Customer comfort zone and type of rewards; opt-in programs that allow customers to choose specific programs combined with financial incentives have shown great results. According to a PWC Health Research Institute 2014 survey, 68 percent of consumers would wear employer-provided wearables streaming anonymous data to a database in exchange for breaks on insurance premiums.[1]

Figure 1. The COVALENCE™ Health Analytics Platform.

Functional requirements. Insurers need three capabilities to take advantage of this opportunity:

1. Ability to access and store large quantities of information in a format allowing for easy access and analysis using a secure, scalable, and highly available data collection and processing platform based on Hadoop, NoSQL, or equivalent technologies, in addition to a team of data engineers to prepare data for analysis
2. Advanced analytical platform capable of analyzing large quantities of real-time biometric data streams as well as integrating other real-time and historical data
3. Domain experts who understand the insurance industry and are capable of working with data scientists to create a set of advanced algorithms to gain better insights

Insurers can have these capabilities today with the COVALENCE™ Health Analytics Platform from Big Cloud Analytics.

The COVALENCE™ Health Analytics Platform

The Big Cloud Analytics Company offers a software-as-a-service (SaaS) platform that provides real-time behavioral indicators based on world-renowned science from the top engagement scholars in the world and Big Cloud Analytics' proprietary COVALENCE™ modeling approach. Big Cloud Analytics serves the financial services, healthcare, and retail industries.

The COVALENCE Health Analytics Platform (Figure 1) provides:

- Ability to collect many hundreds of thousands of biometric data streams from wearable devices that are deployed to patient, insured, or employee populations in a Health Insurance Portability and Accountability Act (HIPAA) and ISO 27001-compliant manner
- Advanced real-time population health management analytics
- Cohort groupings that are flexible to fit the insurer's needs (for example, based on resting heart rate, sleep, and activity level)
- Dynamic overlays of self-reported information such as age, marital status, and tobacco and alcohol intake, as well as other data (such as demographic and attitudinal information) to enhance analytics
- Ability to set up alerts and triggers for conditions such as device abandonment, elevated resting heart rate, and others to users as well as insurers
- Ability to engage your patient, insured, or employee populations with event-triggered personalized messaging to guide them to better health while providing insurers with enterprise-level dashboards and reporting
- Multi-tenant, multi-role, multi-device platform capability:
  - Supports 10 certified wearable devices (Pivotal*, Fitbit*, and others)
  - Supports the ability to add IoT-enabled medical devices
  - Role-based depending on login (for example, user, administrator, department, or company)

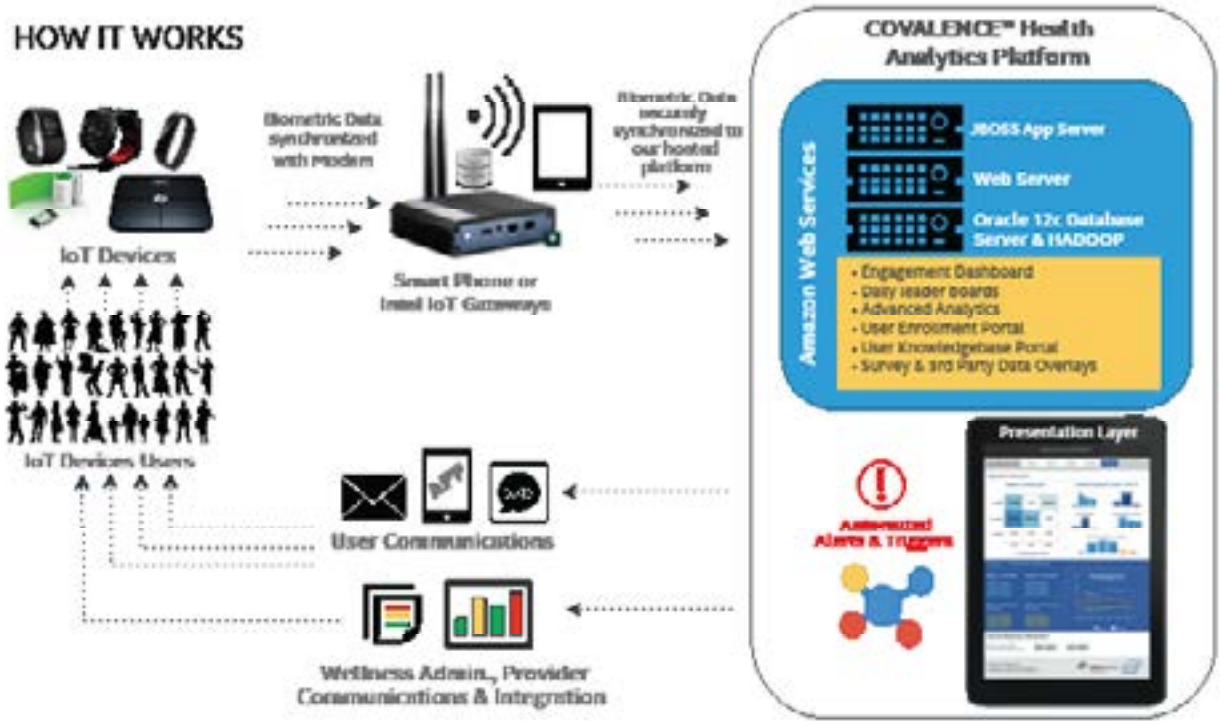


Figure 2. The COVALENCE Health Analytics Platform architectural framework and data flow.

The process of data collection, processing, and analysis is as follows (Figure 2).

The gathering, management, and analysis of this wealth of new data is all part of the Intel and Big Cloud Analytics–provided solution. Alerts and triggers can be implemented for conditions such as device abandonment, elevated resting heart rate, and other risk factors. The solution provides population health managers with the ability to engage patient, insured, or employee populations with event-triggered personalized messaging to guide them to better health. Conservative improvements such as 15 minutes of productivity per day or two fewer sick days per year can provide significant results across an employee base.

Data Generation: The Smart Watch

Wearable devices such as Fitbit* or Garmin* monitor and report biometric data (heart rate, sleep patterns, activity and exercise). These wearable devices sync the data securely with the Edge Gateway.

Data Transmission and Collection: The Gateway

The Edge Gateway enables multiple tracking devices to communicate back to the central organization—whether that is in a data center, or a private or public cloud. The Gateway also provides a number of additional features, such as encryption of data from the fitness trackers, update controls, secure device pairing, 3G management, whitelisting, secured communications, enforcement of application signing, encrypted entries, and cloud connectivity.

Processing and Analytics: Big Data (IoT-Generated Data and Other Big Data Sources)

Unstructured data is transmitted to the COVALENCE Health Analytics Platform—an advanced data processing and analytics platform running as a private or public cloud service. This provides insurers with insight into the data and can lead to meaningful interactions with the customer to improve outcomes. Predictive analytics can anticipate outcomes that lead to proactive action by the insurer or customer.

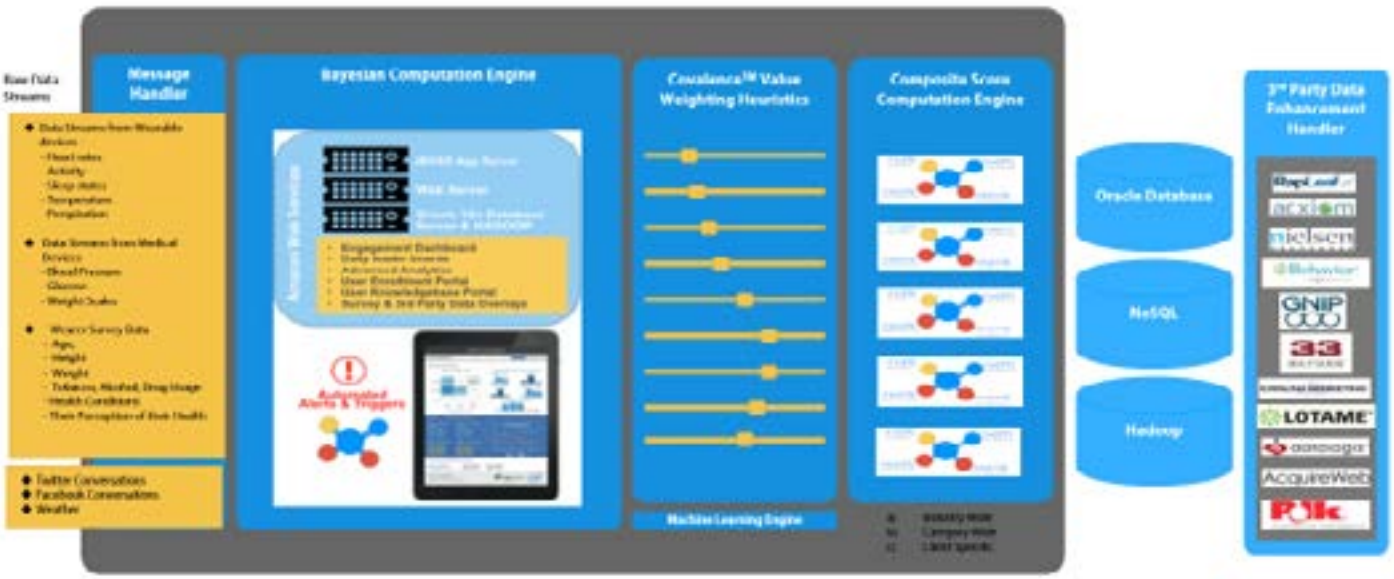


Figure 3. The COVALENCE Health Analytics Platform is an open architecture that is multi-tenant and supports multiple devices in the wearable device category as well as other device data streams.

Alert and Intervene: Visualization Tools

The COVALENCE Health Analytics Platform analyzes many millions of data points hourly, identifies patterns, and makes the insights available as services that are transformed into visualization tools. Dashboards, portals, and mobile applications and reporting are built at the top of the solution stack to make the data actionable. These tools use predictive analytics to provide a population-wide view of the insurer's customer base as well as proactively identify patients at risk, enabling early intervention.

To address security, scalability, and availability requirements, the COVALENCE Health Analytics Platform provides integration with big data technologies such as Hadoop, NoSQL databases, cloud storage, and database solutions supporting a multi-tenant, multi-data streams platform (Figure 3).

About Big Cloud Analytics

Big Cloud Analytics leads the market in real-time predictive analytics technology for the IoT by providing a turnkey solution for bio-identity and population health analytics, including devices, device fulfillment, software, advanced analytics, and end-user support. Recognized in 2014 by CIO Review as one of the Top 100 most promising companies in big data globally, the company provides technology-enabled, real-time behavioral predictions.

Intel (NASDAQ: INTC) is a world leader in computing innovation. The company designs and builds the essential technologies that serve as the foundation for the world's computing devices. Additional information about Intel is available at **intel.com**.

For More Information

For more information about the COVALENCE Health Analytics Platform and the Intel Cloud and IoT platform, visit **www.bigcloudanalytics.com** and **www.intel.com/iot**

[1] Source: PwC. The Speed of Life: Consumer Intelligence Series Consumer Privacy white paper available at www.pwc.com/us/en/press-releases/2014/wearable-technology-future.html

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