The Summary

Our client is the industry leader in industrial-grade digital scale solutions for commercial service vehicles. They have experienced significant growth by combining first class hardware and in-house data management software. However, in recent years, *big data* has transformed the way the world does business. Our client wished to take better advantage of this trend. Blueprint Consulting Services recognized the value of their data and the potential of using a cloud-hosted data analytics solution, not just to modernize their hardware and software offerings, but also to transform the way our client views itself, its products, and its business. Implementing an effective Software as a Service (SAAS) offering using Microsoft's Windows Azure Cloud Computing Platform would allow our client to leverage not just the value of their hardware, but also the value of their *data*.

It is *all* about the data. We really *are* a data company. That is where we want to be. Blueprint and Azure will get us there."

- Client CEO

The Problem

Our client was faced with the prospect of increasing competition and declining market share in its core business sectors. Our client engaged Blueprint to architect and implement a data analytics engine for their existing customer base. They looked to Blueprint to craft a solution that would increase their competitive advantage in the marketplace, significantly upgrade their existing technology platform, and trigger sales growth.

The Challenges

- **How can we derive value from our data?** Our client possesses large amounts of real-time services data. Blueprint was challenged to demonstrate to its customers the actionable business value of their data.
- **How do we improve data accessibility, reliability, and availability?** Our client's services data was decentralized on local hardware and required manual extraction for analytics. Blueprint was challenged to make their customers' data secure, available and accessible from anywhere on any device.
- **How can we reduce costs and increase revenue?** Our client's existing setup and support process was cost-intensive. Blueprint was challenged to streamline onboarding and support as well as determine how to position the new solution in the marketplace to ensure ongoing revenue.

"Blueprint does not just produce top flight software solutions for our clients, we *transform* how our clients do business. We are in the business of architecting futures."

Ryan Neal
President
Blueprint Consulting Services

The Blueprint Solution

- **Design and Create A Cloud-Hosted Analytics Platform:** Leveraging expertise in hosted web applications, Blueprint would create a cloud-hosted analytics engine, using Azure, to drive quick tactical and strategic decisions based on valued data metrics and user-defined thresholds.
- **Design and Implement Azure-based Hardware/Software Ecosystem:** Blueprint utilized a combination of SQL Azure databases and Azure IAAS VMs to transition our client from a local solution to The Cloud.
- **Develop Customized Pricing Model:** Blueprint Consulting Services designed and developed a customized Azure SAAS pricing model. The model covered all fixed and variable costs associated with the client's SAAS platform allowing different scenarios to be simulated and projected.

The Impact

- **Increased Client Sales Traction:** Our client has experienced renewed interest in hardware sales from new and existing customers after viewing product demonstrations.
- **Reduced Service and Support Costs:** An Azure SAAS Solution reduced the need to train users and configure hardware and software onsite across multiple potential configurations. Licensee setup and support can now be accomplished via Azure RDP minimizing the time and cost of business travel.
- **Business Continuity & Reliability:** By centralizing backend infrastructure, Azure data centers provide enterprise-level Business Continuity and Disaster Recovery (BCDR) capability to reduce downtime and eliminate the risk of data loss from localized hardware failure.

- **Increased Revenue:** The economies of scale provided by Azure, paired with intuitive, decision-focused data presentation results in more highly valued data. Additionally, fixed costs are spread amongst all customers resulting in an increased revenue potential through SAAS and hardware sales.

The Project:

ARCHITECTING A FUTURE IN "THE INTERNET OF THINGS"

Our client has a significant competitive advantage in its market with its superior hardware. However, the competitive landscape has been changing over the past five years. Hardware began to be valued as much for the data produced as for the quality of manufacture. Customers were interested in the massive volumes data produced by shifting focus on business intelligence to drive real-time business decisions, root out inefficiency, and maximize revenue. The industry message was clear: it was no longer enough to make the best hardware, you must also make the best software. Our client was faced with the prospect of declining market share as customers began to expect data available anywhere anytime across their organization.

Blueprint Consulting Services was approached with the goal of providing their customers with a web-based, reporting dashboard to view service data. This dashboard would help make their data come alive demonstrating the power of their hardware. "Originally, we viewed the project as a means to sell more scales to customers" states the client's COO. "We had always viewed ourselves as primarily a hardware company." However, the Blueprint team quickly realized that the client's future was not just as a premier hardware company with a dashboard, but as a *data services* company. A Cloud SAAS offering could change their perspective and realize that future. "In many ways, our client was already positioned well ahead of the curve," recalls John Hart, Blueprint's Project Manager. "They made the best sensors, which means they always possessed the best data. They need only to adapt to the new IT landscape to realize their potential."

The Details:

The Blueprint team approached the *Analytics Engine* project, not just to provide a first-class reporting dashboard but also to change how our client perceives its products and views its business. "Blueprint does not just produce top flight software solutions for our clients, we transform how our clients do business. We are in the business of architecting futures," says Ryan Neal, President of Blueprint Consulting Services. "Part of the value that we bring is the experience and perspective to look long term, see where technology is taking the industry, and determine how to position our clients for advantage." Later, the client's CEO related, "We've taken your advice to heart. It is *all* about the data. We really *are* a data company. That is where we want to be. Blueprint's Analytics Engine and The Cloud will get us there."

MICROSOFT AZURE: A SEAMLESS MIGRATION TO ENTERPRISE CAPABILITY

To design a foundation for the *Analytics Engine* project, Blueprint turned to Microsoft's Azure Cloud Services. Our client's existing solution was based on localized hardware and Windows software installations. Given this starting point, Azure's cloud services offered the project three main advantages: ease of migration, ease of support, and enterprise-level service reliability.

Cloud services, in general, offer a vastly improved quality of service, versus local hardware/software solutions. The downside, is that in many cases, existing solutions have to be completely rewritten at great expense before their owners can realize the benefits of Cloud Computing. Blueprint believes that Azure Cloud Services in particular offered an unbeatable solution for most clients looking to rapidly move their existing solutions to The Cloud. The winning combination of Azure IAAS Virtual Machines (VMs) running standard Windows Server 2012 alongside Azure-based, industry-standard SQL Databases allows for seamless migration of existing codebase with all the advantages of a "ground-up" cloud SAAS solution. "Azure brings robust on-demand scalability and datacenter security, which maximizes performance and uptime for the customer all while fully supporting existing code," explains Sam Crewdson, Blueprint's Director of Cloud & Collaboration Services.

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Furthermore, Blueprint's project team knew that by developing an Azure cloud solution, they would dramatically cut the client's training, support, and development costs. Through this solution, the project team looked to address one of the major pain points in the project; as our client gained more customers, it had to support many different configurations using different versions of hardware and software. Support was taking more and more of their time and focus. Using an Azure solution, they can onboard and configure customer installations similarly with just a few clicks and use Azure's built-in RDP management to aid in configuration and issue resolution.

Blueprint's Azure-based solution also helped address a growing support problem as the client COO explained, "Some of our customers were simply not backing up their data or they would turn their servers off. They would call us for help when they couldn't see their data. They simply didn't know or understand where there data was stored and how it got there." By bringing the new Analytics Engine software solution to Azure, Blueprint can ensure that they retain existing user familiarity, while gaining nearly continuous uptime, instant failover, and data backup, thereby increasing overall customer satisfaction and service reliability.

By leveraging the unique advantages of Azure, Blueprint's project team could focus efforts on developing a fully featured, dashboard solution, while greatly reducing overall development time and cost, through retaining existing software as a backend. The result was the development of a complete, end-to-end SAAS solution at a fraction of the typical development cost required for a ground-up recode.

ANALYTICS ENGINE: A FLEXIBLE, INTUITIVE APPROACH TO BIG DATA

The primary goals for the analytics engine were to design a platform that was flexible enough to respond to a changing business landscape, deep enough to allow for analysis, yet intuitive enough to allow corporate decision makers to respond effectively. The *Analytics Engine* achieved these goals through a combination of a flexible foundation, and decision-focused presentation of data.

Analytics Engine Architecture

The foundational tenants of Blueprint's data analytics architecture are flexibility, speed of acquisition, and speed of retrieval. Tool flexibility is critical, as a customer will always desire a new way of viewing or aggregating data, and the tool must respond. An effective solution is one that can adapt quickly to emerging needs with minimal effort. At its core, a Blueprint analytics solution lets the data shape the presentation. "The Blueprint approach is to focus on data-driven design," states Andy Macourek, Principal Technologist for Blueprint. "We heavily leverage metadata to describe the underlying data structure and business rules. Our solutions should evolve and grow with the business by adjusting the metadata, not revisiting the code." This approach was taken with the Analytics Engine. By utilizing metadata to describe business concepts, such as services, metrics, and thresholds, the Analytics Engine can adjust data presentation based on the user's needs real-time. Speed of data acquisition is another integral part of the Analytics Engine architecture.

Companies often base decisions on reporting scorecards built using past data. By utilizing customizable, cycling data aggregation processes, customer services data can be visible in the Analytics Engine directly following transmission from vehicle hardware. "A company's ability to raise and take action on business insight in the moment is critical to compete in today's online world. Blueprint's approach is all about getting the right insight to the right people at the right time" relates Kyle Wagner, Blueprint's Vice President of Operations. Speed of retrieval from the data set is also an advantage of the Analytics Engine architecture. Decision-makers have little patience for report refreshes, and connection speeds vary. The *Analytics Engine* leverages extensive pre-aggregation of data, pre-generation of report visuals, and web and database standards. This approach results in minimal data storage, extremely low bandwidth use, and quick end user performance on any internet browsing device. The speed and flexibility of a Blueprint business intelligence architecture ensures operational insight adapts to the customer and is available anywhere, at any time, on any internet browsing device.

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Andy Macourek
*Chief Technologist*
Blueprint Consulting Services

"A company's ability to raise and take action on business insight in the moment is critical to compete in today's online world…."

Kyle Wagner
VP Operations
Blueprint Consulting Services

The Analytics Engine Presentation

Blueprint approached the challenge of visual presentation of the data by focusing on clarity *with* depth. "Creating a dashboard is easy. Anybody can wire charts to data sets," relates David Uhrig, Blueprint's Lead Software Design Engineer, "Presenting data to facilitate business decisions is the real challenge and that is what distinguishes our work." The *Analytics Engine's* presentation sought to avoid a common mistake with dashboards by understanding the difference between alerting and reporting. "Many dashboards fall short by overwhelming

Dashboard Alert Tiles

the user with data, simply because they can," says PM, John Hart. "This actually inhibits decision makers, by requiring additional analysis to form actionable conclusions." Blueprint believes that depth of data should never overwhelm those trying to make a decision. Thus, at its surface, the *Analytics Engine* dashboard is focused on clarity and decision-making. It uses dynamic alert tiles to prompt a user to act based on their pre-defined "thresholds" for action. However, more detailed data is made available when the user dives into the tile array. For those who want to dive deeper still, pre-built reports and even the raw data itself can be uncovered, reviewed, and exported. It is in this way that the *Analytics Engine* hierarchically links clarity of presentation and ease of decision making with depth of information, which results in a tool shaped by the data and tailored to the needs of each type of user.
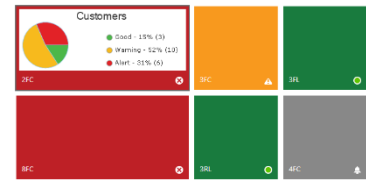
Azure Pricing Model: Sustainable Revenue, Sustainable Service

Creating an analytics solution and the supporting infrastructure is only one component of what Blueprint delivered on the *Analytics Engine* Project. Appropriate pricing is essential to the success of the software roll out so that revenue covers not just the fixed and variable costs of Azure hosting but also costs of continued development, service, and support. "I've seen too many companies go under or not achieve their goals because they charged too little for their software," says Blueprint President, Ryan Neal. To address this issue, Blueprint developed a dynamic pricing model. The pricing model allowed different simulations of customer size, configuration, as well as different SAAS customer price points, projecting net revenue and customers needed to break even out to five years. "The Azure pricing model is what really opened my mind to the idea of our client becoming a data services company," relates the client's COO. "This work is another example of the value we bring to our clients," says Blueprint's Ryan Neal. "When a client partners with Blueprint, they not only receive high quality deliverables, but have access to our team's vast business knowledge and subject matter expertise."

Impact

The deployment of the Azure-hosted, the analytics platform and the Azure dynamic pricing model has brought real improvement to the client's sales efforts and its product offerings. By hosting the *Analytics Engine* in Azure, configuration and training costs for hardware and software have diminished. The *Analytics Engine* and its backend infrastructure can now be set up, managed, used, and supported from any device with a modern web browser. Customers will gain confidence knowing that their data is updated, stored, and backed up at an enterprise-level data center with robust BCDR SLAs. The low resource footprint of the analytics platform combined with the large economy of scale provided by Azure Cloud computing mean that data can be more highly valued and fixed costs minimized and spread amongst all customers resulting in an increased revenue potential. The *Analytics Engine* project has transformed our client from a premier hardware manufacturer to a full service software and hardware provider bringing direct return on investment to its customers. Our client is now better positioned in the market to obtain an advantage over its competition, gain market share in each of its five focus areas *and* improve overall profitability.

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To find a solution that's right for your organization, and review other success stories, please see the Blueprint Consulting Services website (www.bpcs.com).