

The background features a light gray field filled with a pattern of binary code (0s and 1s) that appears to be receding into the distance, creating a sense of depth. In the lower-left corner, there is a large, stylized blue geometric shape composed of several overlapping rectangular blocks of varying shades of blue, creating a 3D effect.

B^mSolutions

Business: Improvement, Integration, Intelligence

On Time.
On Budget.
Software Solutions.



B-Three Solutions is a Pittsburgh-based software development company that works to provide Business Improvement, Business Integration, and Business Intelligence through software. B-Three boasts a growing team of over 30 IT professionals, and a portfolio of expertise in a variety of industries, including healthcare, manufacturing, technology, law enforcement, finance, and telecommunications.

We assist medium-to-large organizations to align their business goals, processes, and technology. We propose solutions that are consistent with business logic and justified by cost-effectiveness. B-Three's design-driven, business-focused approach to IT projects maximizes the return on your investment. This approach has proven valid for all of our clients. We base our methodology on these two fundamental assumptions:

- Your Project Budget is Fixed: In most cases, there are no additional funds available to cover cost overruns or change orders.
- Your Project Timeline is Fixed: A project is generally initiated to meet a particular business need. If that need is not met in a timely manner, costs may be incurred or opportunities may be missed.

B-Three specializes in fixed-fee projects, and that sets us apart from other consulting companies. We are certainly willing and able to handle a job for your organization on a time-and-materials basis, but our specialty is fixed-fee work. Before the project begins, we consult with you to analyze the tasks to be accomplished, and create a project plan. We then submit a proposal containing a list of the deliverables, a firm timeline, and a firm price. Our proposal includes a 1-year warranty on the software we develop.

At B-Three, we understand that organizations must operate with limited resources of time and money. For that very reason, our record of on-time, on-budget performance – substantiated by references and backed up with a guarantee – makes B-Three Solutions an option worth exploring. We deliver projects on time, within budget, with a 1-year warranty.





Fixed-Fee, Agile Methodology

Ever since the founding of B-Three Solutions, we have emphasized the fixed-fee approach to software development projects. The chief elements in a fixed-fee contract are the price, the timeline, and the scope of the project. Years of experience in defining the scope of a project enable us to provide a client with a fixed-fee proposal for an Agile project.

As long as there is a clear agreement with the client firm on the overall scope of the software development project, there is room for the flexibility on details that the Agile methodology requires. At the same time, the client gains the cost certainty necessary for effective budgeting.

One hundred percent of the software we create is written by B-Three employees here in Pittsburgh. We never outsource our projects because quality control is critically important to the way that we do business. There can be no compromise on quality when most of our projects are executed on a fixed-fee basis, with a one-year warranty.

Working with organizations of any size – business, government, and nonprofit – we help our clients meet their business goals, on-time and on-budget.

SECTORS WE SERVE:

At B-Three Solutions we welcome business from any industry. Industries we have served in the past include the following:

- Health Care
- Government and Law Enforcement
- Corporate Startups
- Software Companies
- Technology and Media
- Manufacturing and Industrial
- Utilities
- Educational Institutions
- Telecommunications

TECHNOLOGIES WE USE:

With a highly qualified and diverse staff, we can provide unrivaled knowledge & experience in a variety of technologies:

- Web, Client Server, Business Intelligence, Data Warehousing solutions in either the .NET Stack or Java
- Oracle\Sql Server
- Mobile Application (IOS\Android)
- System Integrations
- COTS Customization





Healthcare Industry

The healthcare industry is one that is constantly changing and evolving to keep up with advances in technology. At B-Three Solutions, we recognize the need for healthcare organizations to improve upon their existing systems to ensure user-friendly processes for employees, and the best possible care for patients. With multiple healthcare projects already on our resume, our staff is trained on the importance of HIPAA regulations concerning confidential patient information. We've implemented electronic medical record-keeping technologies in office environments and remotely from mobile devices. Whether it's data management and analysis, warehousing of information, or integrating mobile technology into existing procedures, B-Three Solutions has the expertise necessary to improve your operations.

PORTFOLIO SNAPSHOTS:



ELECTRONIC MEDICAL RECORDS (EMR) :

A university conducting breakthrough research on Diabetes contracted with B-Three Solutions to develop a data management system for the electronic medical record information that they were using in their research analysis.

B-Three recommended a data mart to enable efficient loading of input data, followed by analysis through a standard statistical package. The EMR input data was extracted using Centricity Physician Office, an application from GE Healthcare. The statistical package implemented was SPSS 16.0.

After designing and constructing the data mart, B-Three created the Extract/Translate/Load (ETL) routines for the university to use each time the physician consortium provided a new set of data. The data mart was structured for compatibility with the SPSS statistical package.

In addition to automating the data-loading process, the ETL routines executed various aggregation tasks (such as medication counts) and inserted the totals into appropriate fields in the data mart. By anticipating the need for these aggregated data items during statistical analysis, the B-Three solution enhanced the efficiency of the analytical process.



REPORT CONVERSION :

A nonprofit company in the healthcare field contracted with B-Three Solutions for a project to upgrade its internal decision-support reporting.

The client firm had a large number of internal reports — some created in Impromptu and others using Crystal Reports — running against an Oracle 10g database. The client engaged B-Three to convert approximately 100 key reports to Cognos 8.

A critical step in organizing the work on the project was up-front analysis of the complexity of each report. During the conversion process, a number of the client's most complex reports were enhanced, with improvements to the internal business logic, the efficiency of execution, and the presentation of the report data. Beyond that, database improvements were identified and implemented to improve overall system performance.

In subsequent years — a period when the client firm expanded into an additional metropolitan area — a number of follow-up projects took advantage of the knowledge that B-Three had gained during the initial report conversion and upgrade. New internal reports were produced, and a number of daily reports were incorporated into an automated daily executive briefing book.



Project

Highlight: Data Warehousing & Analysis

A firm providing professional healthcare services to a large number of community hospitals asked B-Three to propose a solution for efficiently generating its internal reports.

Pre-Proposal Analysis

The client firm received a substantial volume of medical data each day. Initially received in XML format, the information was translated into fields and records, and stored in a transactional database.

During the pre-proposal analysis, B-Three determined that a data warehouse, structured to optimize generation of reports, would be the key component of the solution.

Data Security — HIPAA Compliance

Having completed other projects for clients in the healthcare field, B-Three is familiar with the strict requirements for privacy and data security mandated by the Health Insurance Portability and Accountability Act (HIPAA).

On this project, to ensure compliance with HIPAA, B-Three imposed a number of restrictions upon its software development procedures, including the following:

- All project-related tasks requiring use of actual data were performed on-site at the client firm, using the client firm's machines.
- No actual data was copied to B-Three machines.
- No actual data was taken off-site, either electronically or by hard copy.
- Project-related tasks performed off-site either utilized no data (examples: building ETL routines, preparing documentation and training materials) or utilized test data (example: testing ETL routines).

Software Design and Development

When the project got underway, B-Three designed and built the data warehouse — using SQL Server and SQL Reporting Services Server (SRSS) — and installed it in a testing environment. B-Three then began to develop Extract/Transform/Load (ETL) routines to populate the data warehouse with records from the transactional database.

While the work on the ETL routines was going on, B-Three began to develop the six internal reports specified by the client firm.

On each new report, B-Three worked with client personnel to test the report and confirm that it met the firm's specifications. As this process went on, B-Three prepared the documentation describing how to add, edit, and administer the reports.

When it came time to put the data warehouse into production, B-Three modified the firm's daily processing routines so that the data warehouse would be automatically updated from the new records that were added to the transactional database.

With the rollout of the data warehouse and the six new reports, B-Three wrapped up the project, and provided an efficient and cost-effective internal reporting system for the client firm.

Soon afterwards, the client firm followed up on the project by contracting with B-Three for 13 additional internal reports to be run against their data warehouse.



Government & Law Enforcement

Due to the extreme responsibility placed in the hands of local government and law enforcement entities, it is essential that these industries have access to tools that will improve security, data availability, and ease of business. A veteran in designing products for municipal governments and law enforcement, B-Three Solutions has a wealth of experience developing software solutions for smaller suburban municipalities, all the way up to city and county levels as well. A majority of our related projects consist of improvements to law enforcement operations and government workforce solutions. Contact us to learn more about what we can do to upgrade your existing intergovernmental operating procedures.

PORTFOLIO SNAPSHOTS:



TRANSACTION TRACKING SYSTEM

The Pittsburgh Police Bureau asked B-Three Solutions to design and develop a product to replace its existing system for tracking pawn shop and second-hand-store transactions.

Under the old system, store clerks recorded transactions on index cards, which were then submitted for data entry by city personnel. Using this method, days would often pass before the transaction information was available to crime investigators. Beyond that, the transaction database was not organized for efficient searching.

The new system created by B-Three allows for easy upload of transactional data by shop owners, and a searchable database of products—organized by industry-standard categories. Search criteria include make, model, serial number, and even transaction details.



MOBILE WORKFORCE SOLUTIONS

Contracted by the City of Pittsburgh's Bureau of Building Inspection (BBI), B-Three was asked to update an obsolete, manual inspection reporting system.

The Automated Code Enforcement application designed by B-Three replaced a paper-based system with custom software installed on Mobile Data Terminals (MDTs—handheld computers equipped with Sprint Air Card technology).

The MDTs communicate from the field to BBI headquarters via the Remote Data Broker (RDB), a software product developed by B-Three. The RDB is unique, because it does not rely on a persistent Internet connection. The entry of data by an inspector is not affected by the loss of a connection. The system will “push” the inspection report back to headquarters when the software detects a valid network connection, thus ensuring that data is never lost.



AUTOMATED TIME TRACKING

Prior to the 2009 G20 economic summit meeting in Pittsburgh, the Pittsburgh Police Bureau arranged for an additional 3,000 out-of-town officers to supplement their 900-officer police force.

B-Three Solutions was contracted by the City of Pittsburgh to develop a time tracking system that all officers could use to track their shifts and duty location assignments.

B-Three created an application that would read a barcode from an ID Badge, find a match for it in either the City or non-City database, and insert the appropriate time tracking records.

The application was installed on dedicated PCs at personnel check points situated around the City. Using B-Three's Remote Data Broker (RDB) product, the system included a queuing capability to transfer the time data to a central server.



Project

Highlight: Automated Police Reporting System

B-Three produced an integrated hardware/software solution, utilizing .NET forms for the user interface, with an Oracle database on the back end, to create the Automated Police Reporting System (APRS): A multi-phase systems development project for law enforcement systems in the City of Pittsburgh.

This comprehensive project had several goals:

- Automation of reports filled out by police officers investigating crimes.
- Enabling of officers to enter their reports via laptop computers in the squad cars.
- Upgrading of the Police Bureau's crime plotting GIS application.
- Implementation of a customized data warehouse for crime investigators.
- Enabling of officers in the field to enter, print, and issue non-traffic and traffic citations.
- Replacement of paper reports

The first phase of the project involved the computerization of the incident reports that are filled out by officers investigating crimes. Paper reports were replaced by data entered directly into an Oracle database. The APRS application was initially rolled out to networked desktop computers in police stations throughout the City. This phase standardized and upgraded the City's crime data - streamlining the report approval process and automating the propagation of data to other applications.

"Mobilizing" the Application

The second phase produced a fully functional version of APRS that enabled police officers to enter their reports via Mobile Data Terminals (MDTs — laptop computers equipped with Sprint Air Card technology) in the squad cars. Incorporated into this application was B-Three's Remote Data Broker (RDB) software. The system pushed the reports back to headquarters when the software detected a valid network connection - ensuring that data was never lost. The RDB also handled the rollout of software upgrades to all of the individual MDTs in the field: Instead of bringing the MDT units to a central location for upgrading, the RDB program would wirelessly download the software upgrades.

Upgrading GIS Application

MapStats, a GIS application, was upgraded. The Police Bureau uses the MapStats crime plotting system to analyze trends in criminal activity and deploy its resources effectively. MapStats utilizes the ArcSDE component of ESRI's ArcIMS environment. Crime data comes from the APRS Oracle database. B-Three upgraded MapStats to Version 9 of ArcIMS, and also updated the census data used by the application.

Empowering Crime Investigators

The Modus Operandi (MO) system was created for use by Pittsburgh's crime investigators. The MO system operated against a data warehouse in which hundreds of thousands of APRS reports were optimized for searching. Customized algorithms gave investigators the ability to perform complex queries against the data.

Creating eCitations Module

After APRS had been in use city-wide for more than a year, the application was expanded to include an eCitations module. By means of eCitations, a police officer in the field can enter, print, and issue non-traffic and traffic citations. The design of the application will readily accommodate an anticipated future upgrade — scanning of the barcode on a driver's vehicle registration.



Corporate Startups

Do you have an innovative idea for a software product, but aren't sure of where to start or how to move forward? At B-Three Solutions, we've collaborated with a multitude of companies to help cultivate and nourish their startup projects. Whether you come to us seeking production services on a complete pre-existing product proposal, or you require full development assistance of your ideas from the ground-up, we can work with you to make your vision a reality.

Existing Project Proposal:

If you're looking to produce your software startup idea from a pre-existing project proposal, that's great! Bring us your documentation, and we'll look it over to let you know if we're able to work from your existing documents. If additional consultation is required, we'll arrange for development meetings, charged on a time-and-materials basis. After we've reviewed your content and have a full understanding of your product, we'll provide you with a fixed-fee proposal outlining how and when we'll complete your project at a fixed cost.

Full Process and Product Development Services:

If you've got an idea, but need help developing the concept, proposal and product itself, that's great, too! We'll arrange to meet with you on a time-and-materials basis to flesh out your ideas, and after we have clarity on what the project will entail, we'll present you with a fixed-fee proposal for your entire project. You bring the ideas and we'll do all of the leg work to bring them to life!

PORTFOLIO SNAPSHOTS:



DATABASE SORTING SYSTEM

B-Three created a .NET PC-based web application for a law firm seeking to parse and sort information from the Pennsylvania Magisterial District Court Docket Sheets database to generate a list of potential cold-calling clients for the firm.

The application initiated a nightly sweep of the database to pull information related to docket number, case status, status date, processing status, defendant name, defendant date of birth, defendant address (zip code), and charges for all persons entered into the system.

The records were displayed in a data-grid and the user had the option to perform an address lookup on a particular case. The system recorded when a case record had its address validated, and would not allow the user to send it to the address API a second time.



DIGITAL SIGNAGE APPLICATION

Working for a company in the media and advertising industry, B-Three was tasked with developing a digital signage application. The product request included a digital media tool that would provide information and sell advertisements.

With more technology involved, the product was different from typical digital signage, as it could provide more flexibility and adaptive control in message and content. The message and content displayed on the signage could be controlled online anywhere in the world where the Internet connects. Also, content could be compiled from different sources that the tool could mix together on the same screen at the same time, such as photo, image, data, animation or VDO.



Project

Highlight: Auto Inspection Automation

A company with 30 years of experience in the field of Quality Assurance developed the concept for a commercial software product that would be sold to automobile dealerships and auto service businesses.

The software product would enable the auto service client location to offer a free safety inspection to each customer, record the inspection results, and present safety and maintenance service recommendations to the customer. The web-enabled product would also facilitate follow up communications with customers, leading to repeat business for the auto service client location.

The originating company asked B-Three Solutions to turn its vision into a viable product. B-Three worked closely with them to produce a comprehensive Requirements Specification for the software product. The document included a detailed functional description and an analysis of the appropriate system architecture and hardware/software requirements.

The project continued through design, development, and testing. The cloud-based package consisted of a number of cooperating components. The back end was built with the Apache Struts web application framework and Hibernate persistence framework, all on top of a SQL Server database. A separate Node.js WebSocket server provided real-time communication between clients. On the front end, jQuery and AngularJS were utilized to provide a dynamic experience.

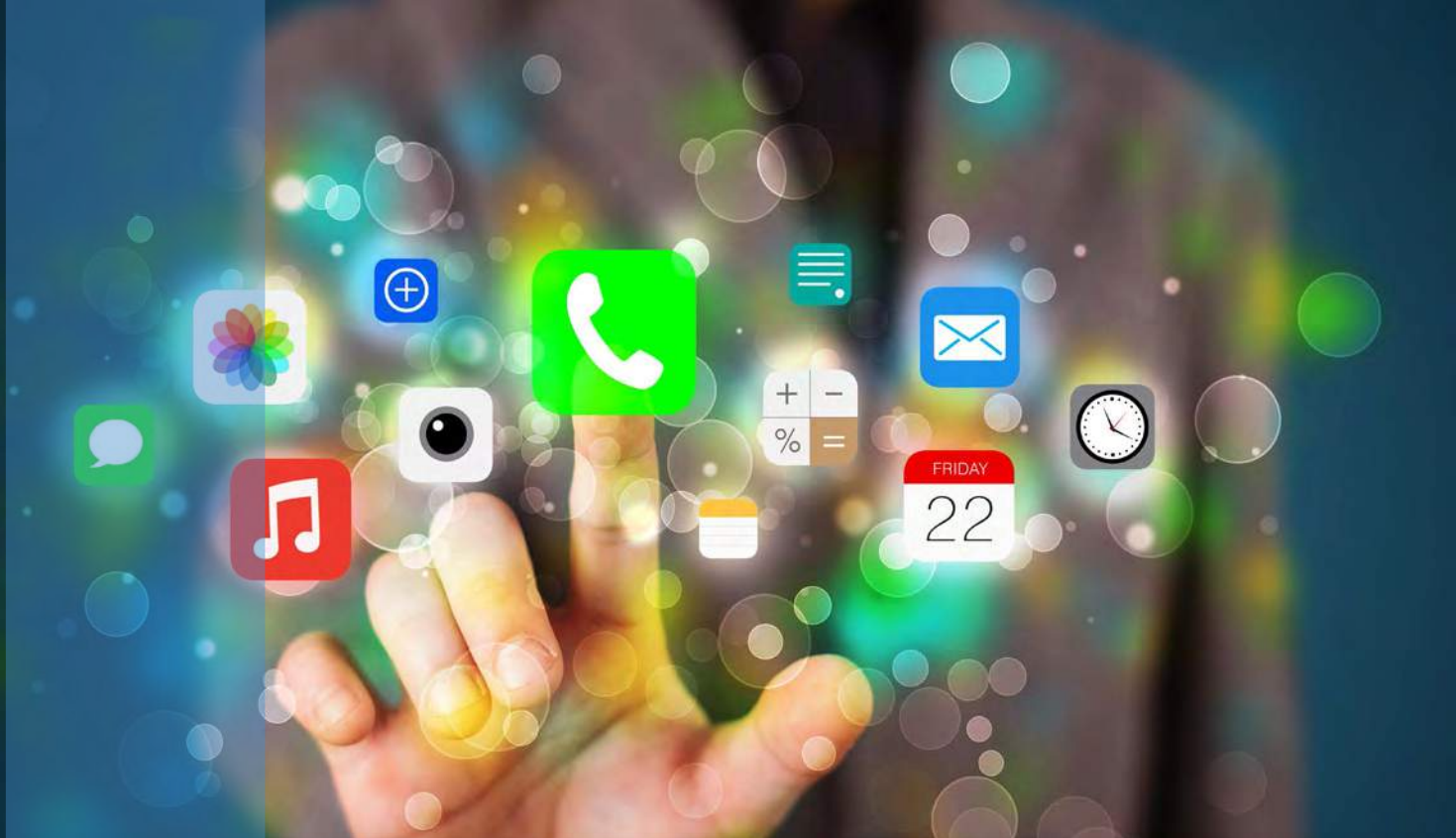
Following successful beta testing of the package at several local auto dealerships, the originating company began marketing the package to dealerships in Western Pennsylvania.

Automobile dealers responded enthusiastically to the introduction of the product, and sales grew rapidly. Dealers who installed the software package reported a consistently favorable response from their customers.

Beyond the positive feedback from customers, the dealers found that the package's workflow features produced a significant impact on their internal operations. The system tracks every step in the service provided to the customer.

With the success of the product at its initial dealerships – producing improvements that were both internal (tracking steps in service provided) and external (enhancing customer satisfaction) – sales of the product took off. It is now in use at more than 50 dealerships, and the sales territory has expanded beyond Western Pennsylvania.

B-Three continues to support the product, implementing new features and enhancing existing capabilities, in a process driven largely by the feedback from the growing customer base.



Mobile Applications

At B-Three Solutions, we pride ourselves on our versatility and willingness to take on new technologies. These characteristics have given us the opportunity to develop numerous mobile applications. With societal expectations pulling people away from their desks and out into the world, it's important for companies to be able to reach their customers on a mobile level. Though mobile technology is fairly new, our veteran development team can scale any existing program into a mobile app to take on the road. Bring your ideas and we'll make them mobile.

PORTFOLIO SNAPSHOT:



MOBILE WORK ORDER SYSTEM:

For a utilities company active in oil and gas exploration, B-Three developed a smartphone application that streamlined the processing of data gathered by personnel in the field.

The client firm had interests in more than 1,000 wells across the country. Personnel in the field monitored the well sites, identifying all necessary maintenance and entering that information on a work order.

Prior to this project, the work orders were paper forms. A supervisor updated the form when the work order was approved. The form was updated again when the maintenance tasks were actually performed, and once again when the completed work was inspected. After the work at the well site had been completed, the work order form had to be processed through the accounting system, in order to apply the appropriate charge-back of maintenance costs to the well in question.

The client firm made the decision to replace the paper-based work order system in order to achieve four important objectives:

- Speeding up the work order processing
- Streamlining elements of the workflow
- Standardizing the data collected
- Tracking each work order at every stage in the processing

To meet all of those requirements, B-Three developed a smartphone application to take the place of the paper-based system. The mobile app allowed for updates straight from the field - eliminating the multiple reviews and updates from different departments that were required with the paper forms. The app allowed the supervisor to update data on a specific well site immediately - making that information digitally available to others in the organization.

****Additional mobile applications developed by B-Three Solutions can be found in the following sections: Healthcare, Government & Law Enforcement**



Project

Highlight: From Web to Mobile

B-Three Solutions was contracted by a non-profit company in the healthcare industry to create a series of applications to assist in the scheduling of blood donation appointments.

The first of those online options was a website created by B-Three for scheduling of donation appointments. The website was well-received by blood donors, and that success prompted the client firm to have B-Three expand the website.

The next stage provided additional options for scheduling appointments through enhancements made to the website, so that it could be deployed on a kiosk or accessed via iPhone and Android technologies.

Most recently, the client firm decided to tailor an appointment-scheduling option specifically for the rapidly growing number of smartphone users. Developers from B-Three worked closely with client personnel to define the core functions of the app.

Once the core functionality was in place, extensive testing by client personnel produced a list of additional features to enhance the experience of smartphone users. Once the app had been rolled out to the public, it quickly became an important source of appointments.



Software Development Resources

If your company is seeking to upgrade or further develop an existing software product, but isn't prepared to permanently hire additional resources to assist with the project, B-Three Solutions is ready to supply a qualified team to help accomplish your development goals. With a 97% employee retention rate, you can be certain that the team members we send to work on onsite projects are qualified, established employees in our office. They are our own employees, on our payroll - when they aren't on an onsite job, they're working in our office - on our projects. This guarantees that you're likely to get the same team members assigned for the life of your project - meaning less time spent educating new resources, and more knowledge retention. In addition, we have the depth of resources necessary to ramp up -or down- the number of employees present at your site. If you're seeking an experienced, reliable team to augment your existing workforce, look no further than B-Three.

PORTFOLIO SNAPSHOTS:



PRODUCT UPGRADE ASSESSMENT

A software development company was considering a major change to its Ambulance Information Management (AIM) system: Moving the software from its current client server environment to a cloud environment.

B-Three Solutions was asked to produce a high-level assessment of the various tasks that would be involved in shifting the system to the cloud environment. The assessment document included a ballpark estimate of the total cost of completing that shift.

The high-level assessment covered such topics as:

- Reasons for considering the move to the cloud environment.
- Status of chief competitors
- Expectations for the system in the cloud environment.
- Additional hardware purchases & other infrastructure upgrades, if any, required for the move to the cloud environment.
- Software components (screens, reports, etc.) that made up the current system.

B-Three worked closely with the client's IT department while completing the majority of the analysis from the B-Three office. The analysis provided by B-Three significantly helped the client make decisions regarding the move from server to cloud.



EXISTING SYSTEM RENOVATION

B-Three was contracted by an insurance services firm to assist with the renovation of their existing internal business system. Following a requirements analysis, the client found the product to be obsolete - it needed to be updated to adopt the current technology and best practices noted in the analysis.

B-Three's recommendation for this renovation project was to utilize the Model View Controller (MVC) architectural pattern. To accommodate this recommendation, B-Three suggested:

- Converting the Business Layer, the Model Layer, and the Data Access Layer to Entity Framework.
- Utilizing any user controls that the client developed, and extending the use of JQuery and Ajax to provide a more appealing user experience.
- Adopting a more object-oriented programming approach, thereby eliminating redundant code and making it more manageable to extend the design.

The client was presented with a project plan showing the work broken into development phases. Each of the development phases concluded with completion of a significant deliverable. The handover of that deliverable included a code review with the client.



Project

Highlight: On-Site Development Team

With technology serving such an integral role in competitive corporate culture, companies are often seeking to expand upon their existing technologies to make themselves more relevant in the marketplace. To improve upon existing systems, or build a new technology, additional resources are necessary in the office.

Since 2011, an Agile software development team from B-Three Solutions has been executing projects for a leading manufacturer of corporate promotional products. The projects required by the client are very diverse, and demand a wide range of development resources for technologies including ASP.NET, C#, WPF, WCF, VB.NET, SQL, MVC, and JavaScript.

One of the key benefits that the client has experienced while working with B-Three Solutions is the ability to ramp up or ramp down the on-site development according to the client's needs. Offering the skills and capabilities of the entire staff, B-Three has been able to provide a depth of expertise to the client when it is needed.

Whether the client requests technical writing resources, programming and coding, or web development, B-Three has been able to swap employees in and out of the projects per client request. In working with B-Three, the client has not simply hired one individual resource, but has the opportunity to utilize the entire B-Three staff, if necessary.

The long-term nature of this assignment attests to B-Three's effective use of the Agile methodology, the ability of our development team to work in close cooperation with the in-house developers, and the quality of the B-Three team's work.



Connect With B-Three Solutions

Interested in connecting with us to learn more? Great! We'd love to hear from you! You can reach us at the contact information provided below during regular business hours: Mon - Friday, 8am - 5pm Eastern Time. Additional information on recent projects can also be found on our website: www.BThreeSolutions.com We look forward to collaborating with you to reach your business goals.



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B^{III} Solutions
Business: Improvement, Integration, Intelligence