

# Mi-Corporation: Easy Enterprise Mobility, Easy ROI

## Mobilizing All Business Processes is Critical to Any Company's Survival

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### What You Need To Know

Mi-Corporation (Mi-Co) is an enterprise mobility company that has been in operation for 15 years. Over most of that time, the company has focused on the mission of enabling enterprises across numerous verticals to mobilize their paper-based business processes and systems and to automate numerous worker-intensive manual processes. In Blue Hill's estimation, Mi-Co has been quite successful in doing so, and has created a core mobile forms platform, Mi-Forms, that virtually makes it a no-brainer for any company – whether a very large department within a Fortune 500 entity or a small business with less than 50 people – to directly harness mobility and entirely eliminate paper-based systems.

The company is now moving quickly to expand its core capabilities to include the ability to create mobile applications that will mobilize business processes that are not specifically paper-based, but that will benefit greatly from being mobilized. The company's mission here is to ensure that the same ease of mobility it has brought to converting paper-based systems becomes available to any line of business leader that understands that mobility provides both competitive and strategic business benefits.

To gain a deeper understanding of Mi-Co's capabilities in mobilizing business processes, Blue Hill has recently conducted in-depth qualitative interviews with five Mi-Co customers. The goal of the research has been to determine what types of issues Mi-Co's customers were in need of solving, how they went about determining that Mi-Co offered the right mobile solution to meet their needs, what the resulting benefits of implementing Mi-Co's mobile solution have been – especially in terms of TCO and ROI, and to offer a guide for determining if Mi-Co offers the right mobile solutions to meet any given enterprise mobile need.

It is important to keep in mind that in most cases the paper-based systems Mi-Co transforms into mobile solutions are mission-critical. That is, Mi-Co's

### AT A GLANCE

#### Business Opportunities

Mi-Co opens the doors for enterprise line-of-business (LOB) leaders across all verticals to develop highly-effective new business services that will both streamline existing business processes and create strategic pathways to new and significant revenue generation. To a great degree, this requires LOB to spend time thinking outside the box, and to open itself up to discovering/uncovering possibilities for developing new business services and capabilities. Mi-Co provides exactly this opportunity.

#### Enterprise IT Benefits

Mi-Co makes it simple to deploy mobility, yet offers the necessary rock-solid foundation for rapidly advancing beyond initial projects. We believe it positions IT to cost-effectively deliver on any project the LOB teams puts in IT's path.

#### Companies Interviewed

- Doyle Security Systems
- A significant non-profit testing organization within the electric power industry
- New York University College of Dentistry
- A major federal clinical research program
- North Carolina Department of Agriculture and Consumer Services

customers have relied on their paper-based systems not merely as ancillary business processes, but more specifically to actually run their businesses. There is a great deal at stake for any company that needs to mobilize such mission-critical business systems – there are inherent and significant risks if a mobile solution is poorly implemented and there is no real margin for error.

Our research strongly indicates that those companies that have embraced the Mi-Co platform have, without exception, greatly improved their business operations and workforce productivity, greatly reduced their total cost of ownership of those operations, and have seen rapid return on their mobile-driven investments in Mi-Co's technology. Our research also underscores that Mi-Co has been highly successful at ensuring that the business risk in migrating to mobility is entirely mitigated.

We are fully able to report that the transformation from paper-based to Mi-Co driven mobile business processes is typically frictionless. The Mi-Co technology that drives the company's trademark easy deployment capability is based on the combination of ten granted and three pending patents, a significant body of intellectual property (IP) that underscores the deep technical efforts Mi-Co has made over the years to make enterprise mobility easy to implement and deploy.

This report will first provide an overview of the Mi-Co platform itself. More importantly, the report then delves into the particular needs of the Mi-Co customers interviewed, and focuses on how and why customers determined Mi-Co's technology to be the right implementation to meet their mobile needs.

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## The Mi-Co Platform: Business Goals

Blue Hill Research has determined that in 2014, businesses finally reached a mobile inflection point – that point in time when enterprise mobility transitioned from being "nice to have" to "critical to have." Mobility in 2015 – whether business to employee, business to business or business to consumer – has become a table stakes business requirement for remaining competitive, and any business that is not mobile-enabled across all three will become or already is a competitive laggard from both a strategic and tactical perspective.

Over the years, through the deployment of Mi-Forms - and more recently with the release of Mi-Analytics and a prepackaged suite of services called the Mobile Field Inspection System – Mi-Co has established an extensive collection of customers it has helped to stay ahead of the mobile curve through mobilizing paper-based systems and field-based data capture. As the company looks ahead to utilizing its new Mi-Enterprise Apps platform to both expand its customer base and to delivering new mobile app development capabilities within its existing base of customers, Blue Hill Research has undertaken to

understand what mobile and business differentiators Mi-Co puts on the table that have led to the company's successful ability to mobilize all critical business processes and to acquire its customers.

Our in-depth interviews with Mi-Co's customers generally point out that Mi-Co's mobile services and Mi-Forms capabilities have clearly been extensively field-tested, field-hardened and field-proven to:

- Drive rapid mobile business process development and easy mobile forms creation and deployment, including the critical ability for employees to work in both online and offline mode, across all relevant mobile operating systems and devices
- Deliver greatly increased speed and accuracy in field data capture for analysis, reporting and real-time business intelligence creation
- Optimize business processes and how workforces operate within those processes, resulting in greatly increased workforce and management execution and productivity
- Significantly drive down the overall cost of previously paper-based operations
- Gain rapid ROI on the cost of Mi-Co-driven mobilization through driving TCO down
- Gain strategic operational advantages over competitors
- Greatly increase customer satisfaction and loyalty

Each of the mobile-driven benefits noted above results in specific tactical improvements in business execution. It is important to note that it is the cumulative effect of all these benefits that delivers true mobile-driven business process transformation, and provides organizations with strategic business and competitive advantages.

## The Mi-Co Platform: Technology

Mi-Co has benefited greatly over the years from maintaining a strong and direct focus on its forms creation technology. The company's customers all emphasize the significant benefits of quickly and easily generating electronic versions of any paper-based form. More importantly, customers note that most paper forms are complex and multi-layered, yet Mi-Co's technology enables users to quickly capture and improve them regardless of complexity.

As we noted earlier, the company's products are based on extensively developed digital writing technology IP. Mi-Co gains extensive business and product leverage through its patents, and we are hard-pressed – as our customer interviews all point out – to find any competitor that can match Mi-Co's



Since moving to a Mi-Co solution, Doyle Security's overall margins have increased by a significant 11 percent. What is interesting - and obviously we are happy about this - is that improving margins was not an initial requirement for the mobilization project. Our sole initial focus was to create far better customer on-boarding. The margins improvement is a great additional benefit of fully mobilizing our end to end business processes.



**Kevin Stone**  
*Chief Operating Officer*  
*Doyle Security Systems*

forms capture and platform capabilities. Mi-Forms also delivers an extensive range of backend connectivity made middleware services that are critical to Mi-Form's overall ease of mobile deployment.

The company's patents and IP uniquely position Mi-Co competitively in terms of converting paper-based systems. That same expertise is now being channeled into also providing a more generalized mobile app development platform that will allow its customers to extend their business processes in new and potentially unique ways that go beyond mobilizing paper-based processes.

The overall Mi-Co platform today consists of four key products:

- **Mi-Forms:** Mi-Co's core mobile technology allows any company to easily replicate and greatly enhance any paper-based forms for use on any enterprise iOS, Android or Windows-based mobile device, including the latest Windows 8-based devices such as Microsoft's Surface Pro, and across any browser through HTML5. Mi-Forms provides support for capturing data from myriad devices, including electronic pens, voice, RFID, direct in-form image, and user-provided drawings capture, to name but a few
- **Mi-Enterprise Apps:** Full and flexible mobile app development platform allows businesses to expand their capabilities to include mobilizing any business process beyond forms-based processes, including the ability to create entirely new mobile applications
- **Mi-Analytics:** Utilizes data collected through Mi-Forms or Mi-Enterprise Apps to deliver meaningful reports and dashboards as well as real-time insights into business operations
- **Mobile Inspection Software:** Pre-packaged and pre-built Mi-Forms software designed to specifically and quickly meet the needs of field inspection, with a current vertical emphasis on government regulatory inspection and oil and gas field inspections

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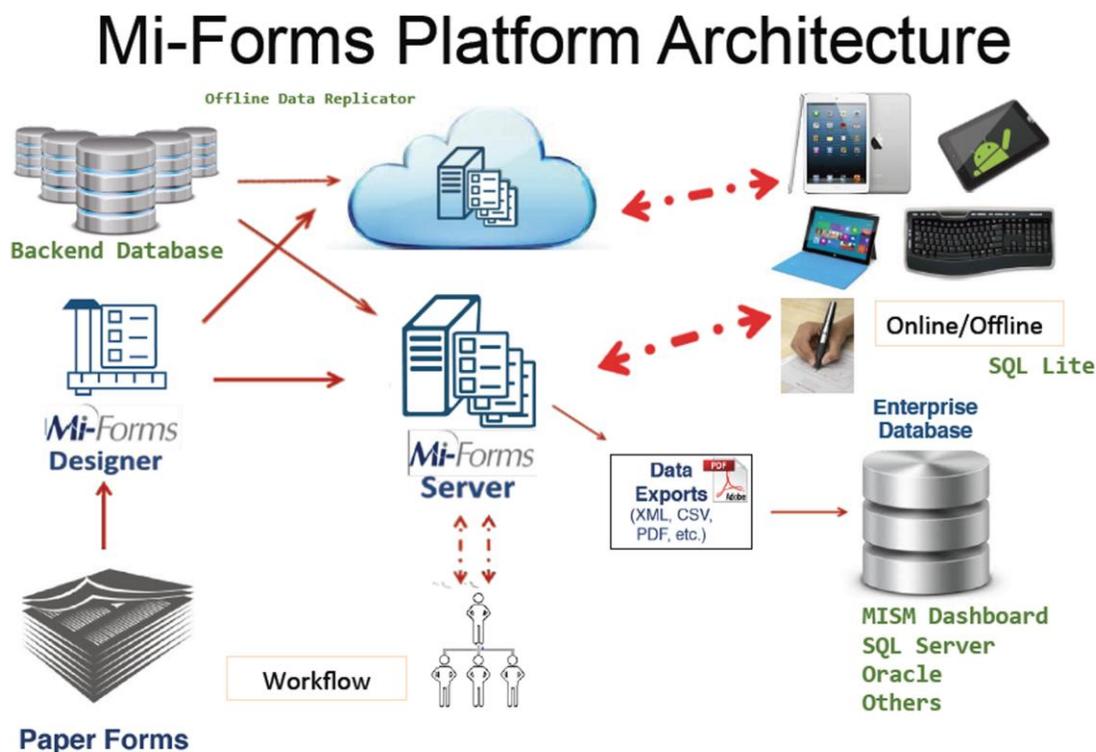
Of the four products noted above, Mi-Forms today owns the lion's share of current engagements for Mi-Co, and we selected our five customer interviewees based on this. For the purposes of this report we will further detail the key components of Mi-Forms, and we will briefly elaborate on the overall structure of the Mi-Enterprise Apps platform. Though Mi-Analytics provides uniquely valuable business and business process insights and can be used as a stand-alone product on third-party data, its operation falls outside the scope of this report. The pre-built mobile inspection packages are ultimately Mi-Forms and Mi-Analytics applications and we will not go into specific details in this report.

Mi-Forms has four components that work together to deliver the "complete mobile forms experience" that provides Mi-Co's customers with the ability to rapidly capture paper-based forms and deploy them as electronic forms across essentially all enterprise mobile devices. The four components are:

- **Mi-Forms WYSIWYG Designer:** Used to both replicate existing forms and to create new forms

- **Mi-Forms Client:** Device-side software that captures and validates field data and runs any electronic forms needed for any given application
- **Mi-Forms Server:** Backend server that tightly coordinates information flow and communication and provides data management for backend systems and administration services
- **Mi-Forms.NET SDK:** A set of APIs that provide advanced app customization, communications with the Mi-Forms server for forms distribution, the ability to embed Mi-Forms services within other apps, and third-party integration with the Mi-Forms platform

Conceptually, the Mi-Forms platform looks as follows:



Source: Mi-Corporation, April 2015

The simpler a platform and its capabilities appear to be on the surface, the more complexity there is underneath the hood. The diagram above masks a good deal of the underlying complexity of eventually capturing data electronically in the field through mobile devices, ensuring that data is secure and validated (including ensuring that all form fields are properly filled out with the type of information required, and ensuring that all required fields contain the needed data).

One very important capability worth noting here is the ability of Mi-Forms to work in both online and offline mode. Working while there is no connectivity available is critical to many of Mi-Co's customers, whose workforces often operate where Wi-Fi and wireless telecom data services are not reliable or are

unavailable. In the field, the Mi-Forms client software allows users to simply continue to work as if they were connected. Back at the enterprise side of things the Mi-Forms server ensures that once reconnected mobile devices are immediately and reliably synced with their backend services and immediately brought up to date.

Hiding complexity doesn't end there, however. What appears to be the simplest piece of the process - electronically capturing and/or designing electronic forms from existing paper-based forms - is entirely complex behind the scenes. A good deal of Mi-Co's IP that makes it easy for the customers we interviewed to create electronic versions of their multipart paper forms resides here.

All five Mi-Co customers we interviewed pointed out that the first key to inviting Mi-Co to the table for an engagement was the platform's clear ability to make electronic forms capture truly easy. In some cases, Mi-Co itself was able to demonstrate this simplicity by responding to RFPs or other requests to demonstrate the platform's efficacy simply by providing already-completed and perfectly-executed electronic versions of paper-based forms for a given project. Every Mi-Co customer we spoke to noted that Mi-Co allowed each of them to quickly jumpstart their projects, and fully eliminated any concerns about translating their paper-based forms - and the business rules that underpin every entry within a form - into greatly-enhanced electronic versions.

Mi-Co's customers also pointed out that Mi-Co's forms designer makes it simple to build different versions of the same form for different device types. End users with devices sporting large screens (such as laptops or large tablets) are likely to see nearly exact "paper-like" electronic versions of the forms they've always used. For smaller mobile devices, forms will be rendered in screen-efficient versions that, while still retaining similarities with their paper counterparts, have been rendered specifically for efficient use on small screens. This capability is to be expected, but Mi-Co's customers unanimously noted that they were surprised by how easy Mi-Co's platform makes it to quickly render these multiple conversions.

The Mi-Co customers we interviewed each had SQL and Oracle backend integration requirements. Mi-Co simply delivered for all of them and was not at all tested by their backend needs - every customer reported that connectivity proved easy to deliver on. Nevertheless, we need to note that Mi-Co has a wide range of backend integration capabilities, and easily connects to the most complex or specialized of systems. Mi-Co is able to connect to all the enterprise standard-bearers: Microsoft SharePoint and SQL Server, SAP, Oracle, MySQL, IBM DB2, Dynamics CRM, Salesforce.com CRM, Laserfiche ECM and so on. Examples of lesser known backend systems that Mi-Co supports include Metadata Rave, ImageSilo and OpenClinica (an open source project focused on clinical research). Mi-Co easily connects to all of them.

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Our team at NCDCA informally investigated a variety of mobile vendors and their solutions, but we ultimately and fairly quickly concluded that Mi-Co, which is conveniently located in the North Carolina Raleigh-Durham area, far exceeded our expectations for the initial project we had to deliver on, and then also exceeded our expectations for delivering on our overall project.

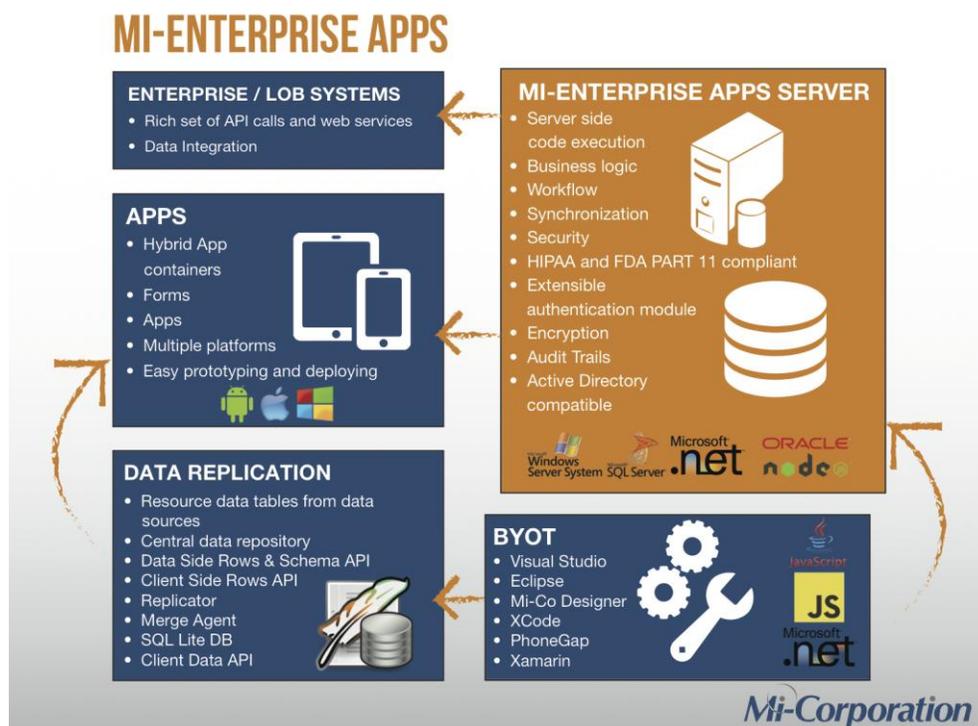
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**Dwight Seal**  
*North Carolina Department of  
Agriculture and Consumer  
Services  
BlackBerry Technology Solutions*

Finally, it is important to note that Mi-Co offers an SDK - Mi-Forms.NET - for use by third-party developers. This is important as it highlights Mi-Co's efforts to establish an ecosystem of valuable third-party services around its own platform. One key example of such third-party integration includes FormBridge, a company that has built software that takes paper-based forms from numerous sources (e.g. PDF, Word docs, JetForm, and existing custom paper forms) and converts them directly into Mi-Form compatible electronic versions.

Our customer interviews and our own analysis of Mi-Co's platform capabilities lead Blue Hill to believe that Mi-Forms represents the current state of the art for mobilizing paper-based business systems. For Mi-Co itself, it represents the near-completion of a mobile-driven journey that began 15 years ago. Even in today's mobile-centric world, most enterprises are only now beginning to convert their paper-based processes, and Mi-Co can look forward to a great deal of new business through Mi-Forms.

However, as enterprises utilize mobility for much more than paper-based to mobile-based business-process conversion, they need reliable ways to quickly and effectively build out entirely new mobile apps - and along with them, to create a non-trivial percentage of entirely new business processes. Mi-Co certainly believes this to be the case and has developed an app development platform that goes beyond Mi-Forms. Dubbed Mi-Enterprise Apps, the platform conceptually looks as follows:



Source: Mi-Corporation, April 2015

Mi-Enterprise Apps leverages everything Mi-Co has learned over the past 15 years in developing Mi-Forms and Mi-Analytics, but also introduces new capabilities that build on its Mi-Forms expertise. A

key component of Mi-Enterprise Apps, as the diagram above shows, is Microsoft's .NET platform, which Mi-Co leverages to provide developers with the tools needed for developing middleware services, security and data encryption, authentication, and synchronization. Mi-Co has also looked to create what it refers to as a BYOT - Bring Your Own Tools - environment, which allows developers to easily use the development tools they know best.

Digging deeper into the platform is, however, outside the scope of this report. We briefly note it here because we anticipate that Mi-Enterprise Apps will become a much larger piece of Mi-Co's overall business over the next five years. We look forward to going deeper in future reports.

## Mi-Co Customer Insights

Mi-Co has a significant number of customers that range in size from small 20 person groups, often working within much larger organizations, to mid-sized SMBs, to very large scale Fortune 1,000 deployments. Examples of larger customers include the pharmaceuticals company Eli Lilly, Carrier, Sutter Health, the U.S. Internal Revenue Service, the U.S. Department of Transportation, Transport for London, and Lighttower Fiber Networks.

For our research we specifically opted to speak to smaller businesses and smaller groups within larger organizations. These include Doyle Security, a 115 person SMB that we've spotlighted in this report, the North Carolina Department of Agriculture and Consumer Services, New York University College of Dentistry, a significant non-profit testing organization within the electric power industry, and a federal clinical research program. The latter two required anonymity to participate due to federal and non-profit status.

Smaller companies and smaller line-of-business groups within larger organizations are typically IT resource-strapped, and for our research we were very much interested in understanding why companies and groups with limited IT resources available to them chose Mi-Co as their mobile vendor. That said, in many cases, much larger companies today also suffer from the same IT resource constraint issues, only on a larger scale. Blue Hill believes that the reasons behind the decisions made by the smaller enterprises apply directly to larger businesses, something not necessarily the case the other way around.

In every case, each Mi-Co customer we interviewed had very detailed, multi-form, purely paper-based business processes and practices in place. The litany of issues surrounding paper-based business processes that emerged from our interviews is entirely predictable:

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We did not conduct an RFP process but were immediately convinced that Mi-Co was the right vendor for our job through its ability to quickly capture all of the electronic data forms needed to let our field candidates run their evaluation exams. Further, Mi-Co demonstrated the ability to get those electronic forms quickly up and running on ruggedized Windows-based tablets.

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**Mi-Co Lead Implementer**  
*Non-Profit Testing Organization  
within the Electric Power Industry*

- Filling out paper forms in the field is extremely slow and time-consuming
- Paper forms are static and never reflect such things as latest company pricing or immediate order entry and placements
- Paper forms require extensive back-end data entry services
- Data entry clerks and admins are daily confronted with
  - Data entry concerns that include such issues as illegible and misspelled content and empty fields that are often required to have information
  - Signature capture and electronic transfer difficulties
  - Data entry errors created through transferring paper information into backend systems
  - Inability to directly and easily capture field-based drawings - typically a time-consuming and potentially error-prone scanning and electronic data integration process is required
- Significant latency between the time a paper form is created, and the time it is entered into a backend system and an electronic record is created
  - Customer order entry/follow-up or billing can take days or weeks, and lag significantly behind the date a given paper form was actually created for an order
- Storage and retrieval of paper-based forms, as well as updating and/or creating new forms is slow, and costly to maintain and store
- Meaningful business analytics are extremely difficult to generate from paper-based systems and impossible to generate in real time

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During the evaluation process for converting our paper-based clinic operations, Mi-Co's initial digital forms development capability proved to be far beyond anything various other consultants were able to provide, and it became immediately apparent that Mi-Co's platform was the only viable solution for us to quickly and cost-effectively build out our complex electronic forms and to deliver on the overall project.

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**Christopher Tung**  
*New York University  
College of Dentistry*

The question, of course - especially for still mobile-skeptical businesses - is whether or not mobilizing business processes can really offset the issues noted above. The answer is a resounding and overwhelming yes, and each of the companies we spoke with demonstrated substantial benefits in improved workforce productivity and in significant reductions in the cost of doing business.

Of the companies we interviewed, Doyle Security Systems proved to be of particular interest. Doyle took a very proactive business and technology stance in evaluating where the company was relative to operating through paper-based systems and where it needed to go. Doyle proved itself to be a progressive-thinking organization in

that rather than simply looking to optimize its business processes in terms of the cost of doing business (TCO), it originally opted to mobilize as a means to delivering a far better overall customer experience.

Doyle understood that mobility was a means to enhancing customer loyalty, and to moving customers to recommend Doyle Security. Initially, Doyle looked to streamline its processes in order to enhance the customer on-boarding experience. But from this relatively simple goal emerged a Mi-Co solution that touched on numerous business processes, all of them originally paper forms-based, that enhanced sales capabilities and sales results, and that drove non-trivial technician productivity improvements.

To better understand how the technical and business needs of Doyle and Mi-Co's overall end-to-end solution came together to deliver significant business advantages, and ultimately a competitive advantage, we've provided a fairly extended customer spotlight on Doyle in the accompanying sidebar to this report.

### Non-Profit Testing Organization

A key company that we interviewed is a non-profit that primarily conducts research, development,

## CUSTOMER SPOTLIGHT: Doyle Security

Doyle Security Systems has been in business since 1919, and installs and services commercial and residential electronic security and life safety systems in New York and Pennsylvania. Doyle's business is based on recurring revenue streams (monthly fees) and ensuring a steady stream of new and renewing customers. In 2010, the company determined that it needed to mobilize its business processes and quickly move away from an unwieldy (if long-used) paper forms-based system of operation.

Kevin Stone, Doyle Security Systems COO and a key member of the team, says that, "Doyle began to seriously investigate implementing mobile processes about four years ago (2011), and we took a deliberate 18 to 24 months to completely design the system we believed we wanted. Ultimately, we completed our fully Mi-Co-driven solution and officially launched it in November 2013.

Stone notes: "Our initial goal for moving to a completely electronic system was focused on greatly improving customer service and creating as seamless a sales, installation, and operational process as possible. We wanted customers to be minimally impacted, and we wanted to improve our time to installation and full operation. We fully understood that our existing paper-based system was a major roadblock to this."

That paper-based system consisted of a set of multipart forms that were handled by Doyle's sales team, internal operations, accounting, the company's central security station (call center), technicians taking forms back out into the field, then back to operations, accounting, and our call center. Ensuring the company had an error-free system was virtually impossible, and inefficiencies in the process were potential competitive disadvantages. Doyle wanted to get ahead of this issue, and in turn, create a competitive advantage for itself.

Doyle has two key backend systems: Bold (a security automation platform used by Doyle in their central station), and accounting and service software from SedonaOffice. Both platforms provide architectures with available APIs - a key mobile requirement was to work with a vendor that would be able to easily connect to these architectures - as Mi-Co does, through mobile versions of its complex paper forms and the underlying mobile applications that would manage those forms.

Doyle originally worked with a mobile app vendor that was unable to meet the company's requirements. Ultimately, the company pulled together an RFP that went out to companies that included very large document management and signature capture vendors. Stone notes that Mi-Co was the only company that was

Continued on next page

and demonstration that targets the generation, delivery, and use of electricity for the benefit of the public. The company is funded by a variety of utilities.

The group also runs various electric power testing programs that are required to be passed by industry students (typically utilities employees) prior to those students being able to go out on real industry jobs. A simple example of testing includes judging the ability of candidates to use probes to test the structural integrity of field devices and the ability to identify structural flaws. Blue Hill will distill the major issues that the group faced relative to testing the numerous students it is responsible for certifying.

First, the test itself consisted of an extensive multipart form. In addition to capturing and recording answers, students are typically required to include sketches related to solutions and question responses. An interesting aspect of the overall testing also includes capturing detailed information about, for example, the type of probe a student is using and the type of device being evaluated.

The problem the above boils down to is the need for students to record numerous information on their exams. In all cases, the group came to realize that students were spending a great deal of potential

## Spotlight: Doyle Security (continued)

able to quickly and effectively connect to Doyle's two key backend systems and deliver the exact electronic forms that Doyle required through the use of Mi-Co's Forms Designer. In short, Stone notes, "Mi-Co simply lived up to its billing, and had us up and fully running on iPads within six months of bringing the company on board. It's also worth pointing out that though the forms were already designed internally by Doyle during the planning stages, they were not simple forms to create, yet Mi-Co's platform made it easy to create them."

Doyle's business hinges entirely on having a clear, well-understood and - most importantly - fully executed and signed contract in hand immediately following a sales call. Stone says: "Our ability to be able to put a contract immediately into our system and to be able to pull a contract up electronically, whether in the office or out at a customer site, has proven indispensable to ensuring that we deliver on our promise of delighting our customers. It is a key competitive differentiator."

A key piece of the solution is operational in nature. Once a sales person captures a customer signature for any given system, the contract is directly and electronically entered at the operation center, and the parts for that system are automatically ordered. This ensures that when the next step in the process kicks in, where the installation technician heads out to the customer site, the technician will have all the necessary parts in hand. This has allowed Doyle to ramp up its delivery capabilities, and has shortened implementation times.

Another important example of how the Mi-Co electronic forms create significant efficiencies is to consider, for example, that prior to the Mi-Co solution, a technician would map security zones for an installation out on paper, and eventually a data entry clerk would need to transfer that information into Doyle's Bold system. Through electronic forms, a technician captures zone layout, then the software immediately transfers the information back to the Bold system, and the necessary fields in the customer's account profile are populated. Data entry is completely eliminated, as are almost all data entry errors. Finally, the amount of time it takes to fully activate a customer's security system once a technician has completed an installation is significantly shortened.

Stone notes that a key measure of technicians' field productivity is based on how much equipment is being installed by technicians within a given timeframe. Based on just over a year's worth of data following the installation of the Mi-Co solution in November 2013, Stone notes that Doyle has seen a substantial non-trivial increase in the number of parts technicians now install that can only be traced to the Mi-Co solution.

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test time filling out exam paperwork rather than actually being deeply tested. The goal, as the team's lead Mi-Co platform implementation person noted, was to "figure out a way to eliminate most of the paperwork a student had to deal with. An initial insight on solving the problem came through recognizing that much, if not all of the equipment identity information a student was entering could simply be provided electronically through a barcode."

From this simple means for quickly providing information emerged the requirement to electronically capture that information. And from that need emerged the powerful idea of converting the entire paper-based examination into an electronic format. Students would be able to quickly scan barcodes to accurately enter, for example, the details of a probe they were using, rather than having to manually enter all that information. Testing would focus instead on allowing a student to demonstrate actual field knowledge."

Mi-Co was recommended to the group through a third-party that was initially assisting in its early efforts to capture barcoded electronic data. They did not, in this case, conduct an RFP process, but were immediately convinced that Mi-Co was the right vendor for the job through its ability to quickly capture all of the electronic data forms needed to let students run their tests, easily capture field data and prove their knowledge and capabilities. Further, Mi-Co demonstrated

## Spotlight: Doyle Security (continued)

Doyle's sales team knows what parts and labor costs (job costing) are and build their sales opportunities and contract pricing by utilizing these numbers. Through accessing Doyle's Sedona accounting software, Mi-Co makes these job costing numbers immediately available as a contract is being developed with a customer. As a result, key stakeholders are directly provided job costing information that allows Doyle to immediately know the margins for any given contract.

Stone says that since moving to the Mi-Co solution, Doyle's overall margins have increased by a significant 11 percent. Stone further notes: "What is interesting - and obviously we are happy about this - is that improving margins was not an initial requirement for the mobilization project. Our sole focus was to create a far better customer on-boarding experience. It's a great additional benefit of fully mobilizing our end-to-end business processes."

For contracts that exceed a certain dollar figure, Doyle requires salespeople to get various levels of approval. Prior to implementing its mobile solution, Stone notes that there were plenty of contracts that went through the system without the required approvals. Today, however, no salesperson can push through a contract into Doyle's systems without proper approvals.

The company benefits as well from greatly increased speed to approval. Prior to deploying Mi-Co's electronic forms, a sales person needed to populate an Excel spreadsheet that would then need to be emailed to whoever was required to sign off on a given deal - a time-consuming process. The Mi-Co solution knows who to route contracts to for specific approvals, and pings those users directly that a contract needs approval or modification from.

Doyle is now working with Mi-Co to mobilize two related processes. The first requires developing a change order form for customers to easily upgrade or update already-deployed systems - for example, adding a motion detector. Second, Doyle is now developing simple prepackaged systems geared to smaller homes with simple security needs, and is developing a form to quickly handle such orders over the phone, and quickly and easily schedule installations.

Finally, Stone won't mention any actual numbers, but does note that through the combination of increased margins and the measured improvements in hardware sales and related improvements in workforce productivity, the Mi-Co solution investment is very close to being paid off in terms of dollars spent. But Kevin Stone is in fact much more interested in longer-term ROI than shorter-term TCO. For Doyle, Stone says, "The driver for long-term ROI will be found in the significant improvements we ultimately make in delivering on customer satisfaction."

the ability to get those electronic forms quickly up and running on ruggedized Windows-based tablets.

Immediate benefits included eliminating the need to store huge collections of paper-based exams (a significant cost), the ability to quickly and accurately pull up student exams if and when needed, and the all-important ability to essentially eliminate students wasting many hours entering data - often inaccurately, on paper. The company itself additionally gained a significant reduction in expenses through eliminating backend data entry requirements, and being able to reassign data entry employees to do more productive work.

The group's implementation lead notes that "Mi-Co's ability to effectively deliver on the needed electronic examination forms and data capture created a scenario where in many cases, students were able to eliminate an entire day of testing - something that saves the utilities that fund us a day of T&E expenses for each student. That is a hard cost that greatly adds up over time."

### **New York University College of Dentistry**

New York University has had a very important program and clinic in place for over 12 years where a team from the College of Dentistry travels to numerous domestic and international locations to provide regular dental care for children and emergency dental care for adults. The program had long relied entirely on a paper-based forms system to keep track of patient information and everything the team and its operation does, but the system had grown enormously unwieldy and costly.

Forms consisted of 6 to 8 pages of paper per patient per visit. Once the team was back from its travels, data entry into a backend system - needed to create electronic information that could be analyzed for a variety of program and business intelligence uses - took hundreds of hours, and data analysis typically lagged significantly. Because the clinic maintains ongoing relationships with patients, it also needs to be able to look up and recall patient records.

Back in 2012, Christopher Tung originally joined the program to analyze data - at the time, an unenviable task, as he puts it. Fortunately for Tung, soon after joining the team, the school's Vice Dean of Development made the crucial decision to move to electronic forms and tablets, and Tung became responsible for design and implementation.

Originally, Tung notes, the school attempted to use internal development sources to build out the project, something that quickly proved ineffective. Tung notes that his predecessor had originally been in contact with Mi-Co, and Tung reached out to the company because of that, as well as several independent developers. As Tung puts it, "During the evaluation process, Mi-Co's initial forms

Our customer interviews and Blue Hill's own deep analysis of Mi-Co's overall platform capabilities lead Blue Hill to believe that Mi-Forms represents the current state of the art for mobilizing paper-based business systems and processes.

For Mi-Co itself, it represents the near-completion of a mobile-driven journey that began over 15 years ago. Even in today's mobile-centric world, most enterprises are only now beginning to convert their paper-based processes, and Mi-Co can look forward to a great deal of new business through Mi-Forms and its other products.

development capability was far beyond anything various consultants were able to provide, and it became immediately apparent that Mi-Co's platform was the only viable solution for us to quickly and cost-effectively build out our complex forms and deliver on the project."

The end result - a system running on Samsung Windows-based tablets, essentially duplicated the benefits all of the companies we've interviewed reported back to us - enormous efficiencies were created, eliminating paper and forms storage saved tremendously on costs, and in Tung's case also provided immediate access to critical data for analysis. The ability to analyze data immediately upon return from a trip in the field proved a major step forward for the program's operation.

It is well worth noting that Tung had an interesting networking twist to deal with as part of his team's solution - for security reasons, and to ensure complete patient privacy, when his field teams deploy, they create private local data networks that utilize one tablet as the master central data repository for all of the forms-driven data being generated and collected by all other team members. Tung reports that Mi-Co was easily able to handle this mobile scenario, and created the necessary links to then automatically move the master tablet data to Tung's SQL-based backend system once back at the home office at NYU.

## North Carolina Department of Agriculture and Consumer Services

North Carolina Department of Agriculture and Consumer Services (NCDA) has been a Mi-Co customer for a number of years. Going as far back as 2006, NCDA's Dwight Seal tells the typical story of the issues surrounding his case field inspection business processes fully based on the use of paper forms - all of which we've highlighted in detail. Seal points to the particular issue of having to convert paper forms to digital data through backend data entry services as a particularly time-consuming issue. Data analysis is a critical component of NCDA's operations, and simplifying data capture to allow for rapid data analysis was a key goal for mobilizing the field inspection system.

At the time Seal convinced NCDA to fund a pilot project to investigate moving their paper-based systems to a fully mobile environment. He secured a very small number of Windows-based tablets and then began to search for the right means to convert paper to digital forms. Seal notes that he did not go through a formal RFP process. Rather, Seal notes, "Our small team at NCDA informally investigated a variety of mobile vendors and their solutions, but we ultimately and fairly quickly concluded that Mi-Co, which is conveniently located in the North Carolina Raleigh-Durham area, far exceeded our expectations for the initial project we had to deliver on, and then also exceeded our expectations for delivering on our overall project."

## NCDA and Mi-Co Quick Stats

### Paper-Based Forms Overview:

- 19 field inspectors completing five forms per day
- Actual cost of operating a paper-based forms system: \$6,254 per month

### Post-Mobilization Overview:

- Total investment with Mi-Co: \$250, 100 (including software, professional services and hardware)
- Net savings to date: \$219, 210 & \$72,790 per year going forward
- Two- to four-week processes reduced to one day

As with the other customers interviewed for this report, Seal notes that working with Mi-Co represented a near-flawless experience. With Mi-Co's direct help, Seal was quickly able to stand up the electronic forms his field inspection team required. Seal's team has since moved to building their forms out internally, a needed capability as Seal anticipates greatly expanding the scope of mobilizing business processes throughout all of NCDA's numerous departments.

## Major Federal Clinical Research Program

The federal clinical research program group we interviewed (we will refer to it as FCRP for short) is a team that operates within a large federal university program. It primarily conducts clinical research for the U.S. military, and works out of major Department of Defense medical facilities as well as installations overseas. Prior to 2012, FCRP utilized paper-based forms to conduct its trials and clinical studies, and made use of a desktop-based electronic data capture (EDC) solution that was not mobile.

Engagement with Mi-Co began in 2012 when the group was in the midst of preparing to run a complex multisite, multi-national study focusing on a specific issue that required enrollment of suitable subjects across multiple clinics. FCRP had determined that its available at-hand solutions (paper forms and non-mobile EDC) were not suitable options for the study, and also wanted to take advantage of the fact that the group's in-the-field clinical research coordinators (CRCs) were mobile-enabled and that funding to acquire Windows-based tablets for project field use had been approved.

For these reasons, FCRP began a search into suitable mobile EDCs. The team pulled together an RFP, and began to evaluate a variety of vendors. In the end, the team's lead Mobile Technology Specialist (MTS) at its Data Coordination Center notes that "Mi-Co won the contract for our study not only because of its mobile capabilities, but in particular because of its ability to operate in both online and offline mode." We noted the importance of this capability earlier in this report during our discussion of Mi-Co's platform and technical capabilities. FCRP provides an excellent example of why this is a critical capability.

The MTS notes that although the participants for the specific study take part in clinics on a base, those clinics are located in areas where both cellular data networks and Wi-Fi coverage are either weak, inconsistently available, or in worst-case scenarios, sometimes not available at all. FCRP needed a solution where the client (on-tablet) forms software would continue to operate and capture all necessary data when out of coverage, yet would be able to automatically upload that data to FCRP's backend systems when field coordinators were once again in areas with available coverage.

### FCRP and Mi-Co Quick Stats

- Paperwork reduction from 20,000+ to roughly 500 paper forms
- Ability to check and correct data errors in real time
- 100 times fewer queries and a significant reduction in data entry errors
- 80 percent of Clinical Research Coordinators report that electronic forms use is a superior and far more efficient use of their time than using paper-based forms

Another important issue for moving to a mobile system was to meet the goal of increasing the number of subjects FCRP would be able to enroll within new studies going forward. With paper-based forms, significantly increasing the number of study participants was a non-starter simply because of the time limitations imposed by the time-consuming tasks of both capturing data in the field and back-office data entry. Being able to do real-time data checks as data is entered on a mobile device in the field, and then automatically moving that data to backend data systems, virtually eliminated concerns in terms of overwhelming available human resources. Greatly-increased data accuracy, of course, leads to far better analysis of the data.

FCRP creates all of its Mi-Forms forms - most of which are complex, dynamic and bi-directional - in-house, utilizing Mi-Co's tools. The group's MTS notes that the Mi-Forms Designer and Mi-Co's backend connectivity capabilities make it easy for FCRP to build its own forms as needed. Bi-directional data capability is important as the system is able to not only collect data but also to transmit information back out to the mobile users in real time. The Mi-Co platform makes it easy to build the necessary mobile application logic behind the forms to accomplish such tasks.

Measuring ROI for FCRP is an interesting proposition. Although TCO is always a consideration, covering TCO isn't nearly as important as ensuring that the group is able to maximize the research value of its clinical trials and studies. Adding many more subjects per study, ensuring far more accurate data for analysis, and providing significant time savings for professional clinicians and doctors are the key measures of ROI for the group. With Mi-Co's platform, they are easily able to deliver on that ROI.

## Conclusions and Mi-Co Next Steps

Our research into Mi-Co makes it clear to us that the company offers a powerful mobile development platform. The company would not have been able to deliver on the platform without the foundation of a powerful portfolio of patents and related IP. Our interviews with Mi-Co's customers, meanwhile, demonstrate that Mi-Co is in fact able to deliver on its promise of easy mobile delivery regardless of underlying complexity.

As we noted earlier in this report, we believe that Mi-Co, without question, delivers the state of the art in mobilizing paper-based business processes, no matter how complex the paper forms - or for that matter, how convoluted the paper-based processes being replaced - might have been. In all cases, bringing Mi-Co into the game resulted in substantial reductions in TCO and substantial increases in ROI,



Mi-Co won the contract for our study not only because of its mobile capabilities, but in particular because of its ability to operate in both online and offline mode. Our clinics are located in areas where both cellular data networks and Wi-Fi coverage is either weak, inconsistently available, or not available at all. We needed a solution where the client forms software would continue to operate and capture all necessary data when out of coverage, yet would be able to automatically upload that data to our backend systems when subjects were once again in areas with available coverage.



**Lead Mi-Co Implementer**  
*Mobile Technology Specialist*  
*Federal Clinical Research Program*

regardless of how a company chooses to define ROI. Clearly, how Doyle Security defines ROI and how NYU's dentistry school defines ROI, for example, are quite different, yet there is a very real and tangible ROI in both cases. The other businesses we interviewed for this report had the same "similar yet different" ROI stories to tell. But the one constant in all cases has been Mi-Co's ability to quickly deliver powerful and highly effective mobile solutions - that is where ROI (and effective TCO) begins.

Next steps for Mi-Co to grow its business are three-fold. First, Mi-Co needs to continue to embrace the opportunities for its core Mi-Forms platform - and we believe there are substantial opportunities here for Mi-Co. Second, we believe Mi-Co is on the right track in opting to deliver pre-built government and energy field inspection packages. These are areas ripe with mobile laggards and mobile opportunities, and it will be easy for Mi-Co to tap into them.

The real next challenge for Mi-Co is in proving it can expand its mobile business beyond mobilizing forms-based business processes - by which we mean that Mi-Enterprise Apps needs to begin making mobile enterprise apps development inroads for the company. Given that we are at an inflection point in enterprise mobility and that enterprises must become mobile, it is really Mi-Co's game to win here. We believe the odds are favorable for Mi-Enterprise to make the necessary inroads to succeed.

Blue Hill believes the key to any successful enterprise tech implementation and deployment - mobile or otherwise - is based on how well a company's line of business, enterprise IT, and financial teams come together to both focus on their specific needs and to find the necessary means to meet those needs in a harmonious way. It is worth understanding this especially in the context of the Mi-Co customers we have detailed in this report. For enterprises, we believe the following are the key considerations with regard to Mi-Co, and ultimately in making the decision to engage with Mi-Co:

**Business Opportunities:** Mi-Co opens the doors for enterprise line-of-business (LOB) leaders across all verticals - and within their own groups inside of both large and small businesses - to develop highly-effective new business services that will both streamline existing business processes and create strategic pathways to new and significant revenue generation. To a great degree, this requires LOB to spend time thinking outside the box, and to opening itself up to discovering/uncovering possibilities for developing new business services and capabilities. Mi-Co provides exactly this opportunity.

**Financial Considerations:** Financial teams must carefully consider the potential for substantial ROI through well-considered new investments in mobility. It is critical that those financial teams ensure their LOB and IT teams look for the best solutions, which will not automatically translate to the least expensive solutions. Mi-Co will very likely not prove to be the least expensive solution up front. But it will ultimately deliver the greatest level of mobile risk mitigation, rapid deployment, TCO - and ROI.

**Enterprise IT Benefits:** Mi-Co makes it simple to deploy mobility, yet offers the necessary rock-solid foundation for rapidly advancing beyond initial projects. We believe it positions IT to cost-effectively deliver on any project the LOB teams put in the IT team's path.

## ABOUT THE AUTHOR

### Tony Rizzo

#### Entrepreneur in Residence



Tony Rizzo joins Blue Hill Research following a 20 month stint heading up TMC's enterprise mobility and wearable technology coverage. Prior to TMC Tony spent several years within the mobile vendor community. Before his journey into the vendor community Tony spent five years as the Director of Mobile Research for research analyst firm The 451 Group, covering all aspects of enterprise mobility. There he lived through both the early and later stages of both consumer and enterprise mobility and the first stages of the BYOD enterprise mobility consumerization phenomenon following the release of the original iPhone. Prior to moving into tech journalism, research and analysis, Tony served as the Assistant Director for Information Technology at New York University's School of Continuing and Business Education, delivering extensive computer technology training programs.

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