Liberty Mutual Insurance Modernizes IBM i Software Development

A Liberty Mutual Success Story

Liberty Mutual Transforms Software Development, Elevates IBM iwith Midrange Dynamics Modernization Solutions

Concerned that the IBM i and its applications were being perceived as outdated technology by senior management, David Jones, IBM i solution engineer at Liberty Mutual Insurance wanted to change minds about the viability of the platform. No one had to tell David and his colleagues about the power and reliability of the IBM i, but he knew that there was plenty of room to improve the agility of his team's software development practices. With that, David and some managers from the company's 20-member IBM i software development team attended the semi-annual RPG & DB2 Summit conference to learn about the latest advances in development technologies and approaches.

"We came away from the conference amazed at what is possible on the IBM i from a software development perspective," says David. "Things like modern concurrent development and DevOps practices, the Eclipse capabilities of Rational Developer for i [RDi], the ability to create web services natively on IBM i, and the accessibility of a variety of open-source tools and methodologies were truly impressive. Implementing these practices and tools had the potential to transform how we do software development and hopefully, in the process, change the perception of the IBM i within our organization."

Start by Fixing the Weak Links

As David began to see how these newfound tools and practices could be put in place, he knew that the company's current IBM i change management software was a weak link.

"We had really been struggling with our change management solution," says David. "More often than not, our developers were making software changes and doing QA testing outside of change management because of how cumbersome it had become. We were losing control of objects and running into security and compliance issues."

While at the Summit, David spoke with representatives of Midrange Dynamics, and he was impressed that their MDChange change

—David Jones
IBM i Solutions Engineer
Liberty Mutual Insurance

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management solution would be a significant improvement over what his team was currently using. David was equally impressed that MDChange and other Midrange Dynamics offerings were designed to take full advantage of the modern software development processes he was keen to implement.

"It was clear that MDChange would get our change management processes back on track," says David. "Plus, it would give us the needed capabilities to start moving toward DevOps and concurrent-development practices. What sealed the deal was the competitive cost of MDChange," adds David. "To me, that made moving forward with Midrange Dynamics a no-brainer. On top

of that, the software included a migration tool to make it easy to move from our old change management solution to MDChange."

MDChange Delivers a Host of Time-Saving Development and Deployment Features

David's developers were excited about numerous features of MDChange, including the ability to easily roll back should a problem arise during the software promotion process, which was not even possible with the previous solution. With MDChange, if an installation cannot be completed, it is automatically rolled back, and a detailed error report is generated.

"The rollback capabilities of MDChange became a huge time-saver for us," says Raj Angamutha, senior IBM i application architect. "With our previous change management product, when we ran into an issue with a software release and had to roll it back, it would be a whole process of locating and restoring the earlier version from a backup. With MDChange, a single action on the production system executes the rollback. And we can be very granular with the rollback, selecting only specific objects."

"Another big time-saver that MDChange provides for us relates to compliance," continues Raj. "Because of the nature of our business, we are regularly audited for compliance due to SOX and other regulations. In the past, when our compliance team asked for information related to our software development processes, it would involve using SQL to manually pull the requested data. With MDChange, there are built-in audit trails and compliance report templates that make it easy to extract required information and have it routed automatically to the company's compliance team.

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Senior IBM i
Application Architect

Liberty Mutual Insurance

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"In addition, with MDChange we can set roles for different users and needs. This helps us closely track activity, which is especially helpful for audits."

An additional compliance-related area of MDChange that impressed Liberty's IBM i development team is its ability to put SQL commands on objects that automatically execute during software distributions.

In the past, if a developer needed to run a post-installation command in a secured environment, a powerful profile would need to be temporarily adopted to run the command. With MDCMS, commands can be embedded in distributions and executed automatically before or after installs, with all necessary authorities applied. This reduces the use of powerful profiles by developers, which makes compliance officers happy.

Compliance aside, the ability to have commands automatically execute for any number of reasons during the software-deployment process was a huge time-saver.

The Key to Full Adoption of RDi

Another crucial step in the software development modernization journey for David and his IBM i development team was the implementation of the Eclipse-based RDi development environment.

"We brought in a well-known RDi expert for two days of training, and our developers were excited to make the transition," says David. "Developing in RDi is a huge leap forward when compared to PDM. Unfortunately, after a few months, I began to see several developers falling back to coding in green-screen PDM when they would run into issues and were up against deadlines. Before long, all of the developers were doing their work in PDM, which was a real setback in our progress."

"Sometime after we hit the wall with RDi, we were implementing MDChange and became interested in Midrange Dynamics' MDOpen cross-platform change management product and how it plugs into RDi," continues David. "MDOpen adds enormous flexibility in how information is organized and presented within RDi. When I showed this to some of our developers, they were very impressed, particularly with how quickly they could access needed information and cross-reference objects within their development environments. Because of this and more, they were willing to give RDi another try. With MDOpen, all of our IBM i developers have now fully embraced RDi."

"MDOpen speeds the code-review process in RDi," adds Raj. "We can quickly tell what library to compare and see what line changed in any program, making it much easier to do code reviews."

Streamlined Web Services with MDRest4i

Liberty Mutual processes large amounts of data from insurance policies, claims, underwriting, and more, which is constantly being fed into business-critical applications residing on the IBM i. In addition, certain data that already resides within IBM i applications must be made available to agents, customers, partners, and other entities. Many of the integrations of incoming data were done through cumbersome batch processes; plus, making data available to outside parties through secure portals often required the creation of multiple clones of databases, which could be the source of data-integrity issues.

"Our data integration and customer-access processes were monolithic, brittle, and time-consuming to maintain," says Eugene Shal, IBM i solution engineer in charge of integrations at Liberty Mutual. "We were working to replace many of these processes with agile web services, but progress was painfully slow, particularly because of the complexity involved to transform data from flexible JSON and XML formats into the rigid data structures of our applications, and vice versa."

Other MDChange capabilities that provide significant time-saving benefits for the Liberty Mutual software development team include:

- Setting up development and install procedures so that MDChange can execute these automatically for each distribution.

- Automating library management during testing processes, which ensures the correct library list is always in place for that environment. This creates repeatable and streamlined testing strategies.

- Scheduling software installations.

- Viewing object dependencies quickly with MDXREF, the powerful object cross-referencing tool that is included with MDChange.

- Utilizing data groups and control files for checkout and promotion tasks, ensuring all needed objects are in place during development processes.

- Eliminating level-check issues during promotion of code. MDChange automatically monitors level checking and provides warnings on potential issues before code is promoted.

- Automating management of message IDs, which used to be a manual process in the previous change management solution.

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Liberty Mutual Insurance

"When I attended a demo of MDRest4i, I was wowed," continues Eugene. "What I saw was literally like night and day compared to what I was having to do to create web services. I immediately went to David as well as my supervisor and said we need this now, and they agreed. Today my API-creation processes for web services are easily 50 times faster because of MDRest4i. I just drop a JSON payload sample, and MDRest4i takes care of everything else to create the integration with our system of record."

"Today we have web services that move data into and out of IBM i applications in near-real time," adds David. "And because of what we've been able to accomplish with web services using MDRest4i, folks from other IT divisions of the company have been knocking on our door asking to help them build interfaces. On top of that, we're having some very positive conversations these days with our

CIO and senior management about what we are able to do with web services and open source on the IBM i. All of this is changing attitudes about what's possible on the platform."

Exceptional Support and Responsiveness

"If ever we run into an issue or have a question, the folks at Midrange Dynamics are right on top of it," says Raj. "In addition, the company is always willing to consider our suggestions for enhancing MDChange and we've been happy to see many of these enhancements show up in new releases."

"Midrange Dynamics is extremely helpful with training and support," adds Eugene. "Right from the start, they made sure I was getting the most out of the tool. They are always quick to respond, not only to questions I have about MDRest4i, but also to general questions about web services.

"We really appreciate that Midrange Dynamics is a smaller company that provides a personal touch," offers David. "Not only are they very responsive when we call with a question or issue, but the company frequently issues new updates of MDChange, which means we quickly see fixes and enhancements. In fact, we've received major updates to MDChange twice in the past few months. Compare that to our previous change management solution vendor who only issued major updates every year or two."

Transforming Mindset About IBM i

"It's been a fantastic journey with Midrange Dynamics," says David. "We're making great strides toward our goal of having a modern, continuous-improvement/continuous development pipeline. We've significantly increased the speed and agility of our

development and deployment processes, making what we do around IBM i more understandable and more appreciated, not only to developers outside of our department, but to senior management, who have become more willing to increase investments in our IBM i applications and infrastructure."

"Midrange Dynamics has not only improved our change management tools. Their solutions and expertise have transformed the mindset of our developers, who now fully embrace our software

development modernization efforts," David continues. "A case in point is, after the deployment of MDChange, MDOpen, RDi, and MDRest4i, the team and I went out for a beer and celebrated all that has been accomplished together thus far. As it is with any new initiative, there is at least one member of the team who is pessimistic during the process, and this was no exception; however, during our celebration that person came up to me and said, 'David, you have my full support.' That spoke volumes to me." ▌

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