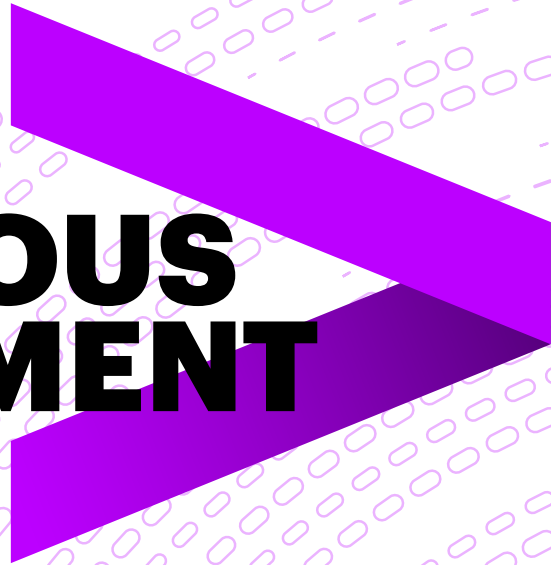


DRIVING CONTINUOUS IMPROVEMENT

THROUGH DEVOPS
FOR MUREX CLIENTS



DevOps—Reducing complexity and driving innovation in an ever-changing environment

A volatile mix of new regulatory demands, disruptive technology and competitive challenges is exerting significant pressure on financial services firms to innovate faster and perform better—all while migrating legacy systems, improving efficiency and controlling costs.

DevOps is at the heart of this process—bringing development and operations teams together to streamline IT and implement automated software innovation and deployment processes.

WHAT DOES DEVOPS MEAN, AND WHAT DOES IT MEAN TO YOUR FIRM?

Imagine if you could deliver on-demand functionality improvements to your users independent of release cycles.

Imagine if these changes are deployed at higher frequency and with greater quality than before.

Imagine IT teams empowered by reducing the time from idea to impact while improving reliability.

Imagine all this in an environment where business-centric metrics that enable real-time service management lay the foundation for continuous improvement.

These are the common capabilities and benefits that could be achieved by applying DevOps within your firm.



RELEASE AT PACE

- New features could be introduced in days or hours, not months
- Metric-driven feedback loops improve productivity & provide guidance to continuously tune business services



MAINTAIN QUALITY

- Tests executed in representative environments automatically
- Elimination of regression defects early in the lifecycle



GROW WITH CONFIDENCE

- Issues resolved as they are forming
- Proactively manage infrastructure and resources

DevOps automation encompasses everything from coding and version control, to packaging and release management, to testing and deployment, to production, and finally, to monitoring of the production end result.

However, it's safe to say, DevOps also means different things to different firms. While the essential principles of DevOps are the same, every firm undertakes its own DevOps journey—shaped by its specific needs and capabilities.

ACCENTURE AND MUREX

Accelerating the trading platform DevOps transformation journey for Murex clients

Solving the challenges of today



AUTOMATION

- Automate the provisioning of environments
- Automate the deployment of release candidates and execution of test suites



FEEDBACK

- Automated test executions form the backbone of quality assurance
- Automated test suite executed early in the development chain to increase impact



MONITORING

- Active alert based monitoring of key environments
- Operations empowered to preemptively address growing issues through early intervention or proactive design

Trading platforms are complex, involving a myriad of upstream and downstream systems. As a leader in the DevOps space, Accenture has partnered with Murex in applying DevOps to Murex's trading platform solutions to bring even greater value to Murex's clients.

A leading trading platform provider, Murex offers capital markets firms unified solutions that provide the end-to-end support these firms need to be competitive in today's rapidly changing business environment.

As part of a continuous integration pilot project for a global client, Accenture and Murex were faced with high complexity and little availability in the way of applicable market-standard DevOps tooling. The key challenges within the Murex platform were:

- Co-mingling of code with configuration, static and market data—all housed in varied forms of storage within the database

- Use of proprietary languages (pre-trade rules, event and post-trade workflows, UDF assignment rules, etc.)
- Specialized tooling and processes required to bridge the gaps in the DevOps ecosystem

Accenture and Murex are working together to develop a fully-automated DevOps model capable of overcoming these challenges and delivering the functionality capital markets clients are looking for. A number of best practices have been defined to enable a DevOps model for a Murex customer, which include:

- Applying the appropriate tools at each stage of the delivery process (code, build, test, package, release, configure, monitor)
- Establishing a continuous integration stream to support ongoing innovation delivery
- Implementing test-driven development in support of continuous integration

THE SIX ELEMENTS OF DEVOPS AT ACCENTURE

DevOps is both a functional and a cultural change. It aligns and improves the development and operations functions in pursuit of business goals through rapid feedback and flexible IT—enabling continuous improvement. Our clients could innovate faster and with lower risk by implementing a DevOps model that encompasses the following six elements:



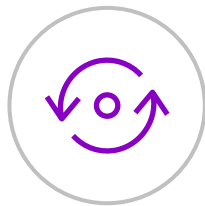
SOFTWARE-DEFINED INFRASTRUCTURE AND CLOUD

capabilities that allow for the automated creation of environments, dynamic scaling, drift detection and remediation



AUTOMATED SOFTWARE RELEASES

based on the automation of build and deploy processes, application asset management and SCM



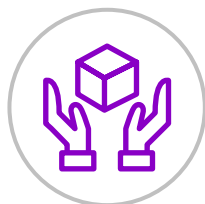
CONTINUOUS INTEGRATION

supported by advanced software configuration management (SCM) concepts, automated unit testing, static code analysis and an automated build and deploy process



AUTOMATED OPERATIONS

that include automated event recovery, monitoring and anomaly detection



CONTINUOUS DELIVERY PIPELINES

(with automated quality assurance) enabled by the orchestration and automation of all software development lifecycle processes



A DEVOPS CULTURE

in which everyone in the organization adopts a DevOps mindset that supports all of the above elements and maximizes the benefits of DevOps transformation

BEYOND TOOLS AND PROCESSES – A CHANGE OF MINDSET

Beyond the optimization of continuous integration processes and automating tasks, it is critical to recognize that the mindset of leadership and the development-operation teams must also be transformed.



COMMUNICATION & AWARENESS

Building awareness, celebrating success and providing clear direction



TRAINING & COACHING

Enabling the workforce to achieve the vision



METRICS & MEASUREMENT

Reinforcing the vision and providing a means for continuous course correction



CULTURE & BEHAVIOR

Incentivizing behaviors that shift accountability and change the culture



BUSINESS ENGAGEMENT

Value-led business and technology partnerships



CONTINUOUS DELIVERY

Streamlining change management procedures and segregation of duty limitations

Continuous innovation, improvement and growth must exist as part of the leadership teams' values. Moreover, the following organization-wide ideas should be introduced:

Eliminate traditional silos in which the development and operations teams are operating separately within the organization, thus preventing or slowing down the transformation. An essential part of the transformation is the existence of cross-functional teams that are driven by a single vision.

Practice strong communication within the teams and between teams and leadership. Value-led relationships between the business and technology groups must also be reinforced.

Learn from mistakes. Traditionally, when failures occur, organizations overly focus on assigning blame to one or more

contributors. Failure should instead be viewed as a shared responsibility and an opportunity to learn. The DevOps mindset focuses on driving discussions to identify root cause, then developing and documenting solutions. Successes should also be celebrated as a joint effort.

Redefine KPI and metrics during the roadmap definition to include velocity, quality, and performance as measures of progress for delivery or project activities. Continuous tracking of these metrics is critical to assess progress and provide course correction during and post-transformation.

Include KPIs on the skillset matrix, based on continuous team training and development. All training and development must be geared toward workforce enablement to achieve the DevOps vision.

WHAT'S GETTING IN THE WAY OF YOUR DEVOPS EFFORTS AND HOW CAN YOU IDENTIFY THE NEED FOR A DEVOPS TRANSFORMATION?

Many clients don't yet have the level of automation they'd like to help them achieve the results they want and stay competitive in the marketplace. In fact, only 17% of IT teams are able to deliver innovation fast enough to meet today's demands.* Why? There are a number of factors that get in the way, including:

- The tendency of IT organizations to spend more time testing, deploying and releasing software than designing and building it
- Ongoing manual software releases that result in a high proportion of production incidents due to human error
- A misalignment of values between IT development and IT operations teams

Capital markets firms in particular face the following common challenges:

- Complex integration with legacy systems
- The need to work within organizational constraints
- Inability to independently run data batches
- Difficulty in applying end-to-end automation
- An inadequate database messaging infrastructure
- Complicated code deployment
- Traceability and audit of code and configuration changes

If your firm is experiencing any of the following challenges, there is a strong chance you could benefit from a DevOps transformation:

- New environment deployments take an excessive amount of time
- Infrequent releases with key man dependencies in packaging or deployment
- When there is a failure, the focus is on blame rather than resolution
- Developers and software operations personnel are not aligned
- There are prolonged outages and downtimes
- Development and deployment efforts require multiple and time-consuming reviews and signoffs
- Teams are highly specialized rather than cross-functional

Getting help with your DevOps transformation journey

Once you've determined the need for change, the next steps in your DevOps transformation journey are to conduct a DevOps maturity assessment, create a DevOps framework and roadmap, and then rapidly iterate the implementation of DevOps practices.

Contact us. We can help.

*Source: IT Speed: The Crisis and the Savior of the Enterprise," A Forrester Consulting study commissioned by Chef, December 2013

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