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Could anyone have predicted how dramatically consumer purchasing behaviors would change in 2020? Turns out no one could – not even AI models we train to sense and respond to changing behavior. A recently published MIT Technology Review article points out that machine learning models built on assumptions about past behavior don't work as well as they should when behavior changes unexpectedly. As Centific's Rajeev Sharma pointed out in the article, AI-enabled applications need a better approach to machine learning – both better models and also more ongoing guidance from human beings. The time needed to retain and deploy new AI models simply takes too long, resulting in models that cannot keep up with change. The need to improve machine learning is growing even more acute. Spending on machine learning is estimated to reach $57.6 billion by 2021, a compound annual growth rate (CAGR) of 50.1 percent. But with that increased spending comes an increased risk of failure. Reports show that a majority (up to 88 percent) of AI initiatives are struggling to move beyond the test stages We believe MLOps can help. AI needs better machine learning models.

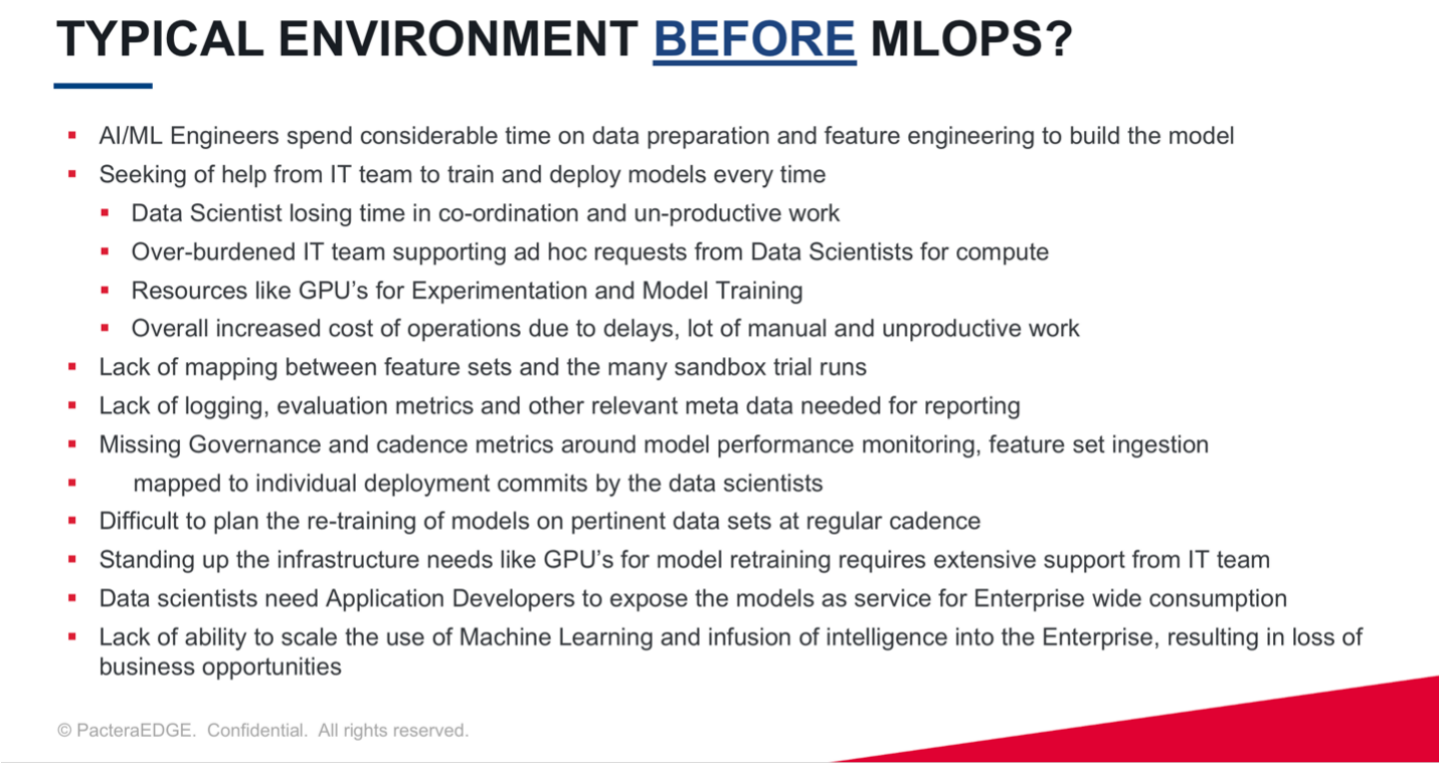
What Is MLOps?

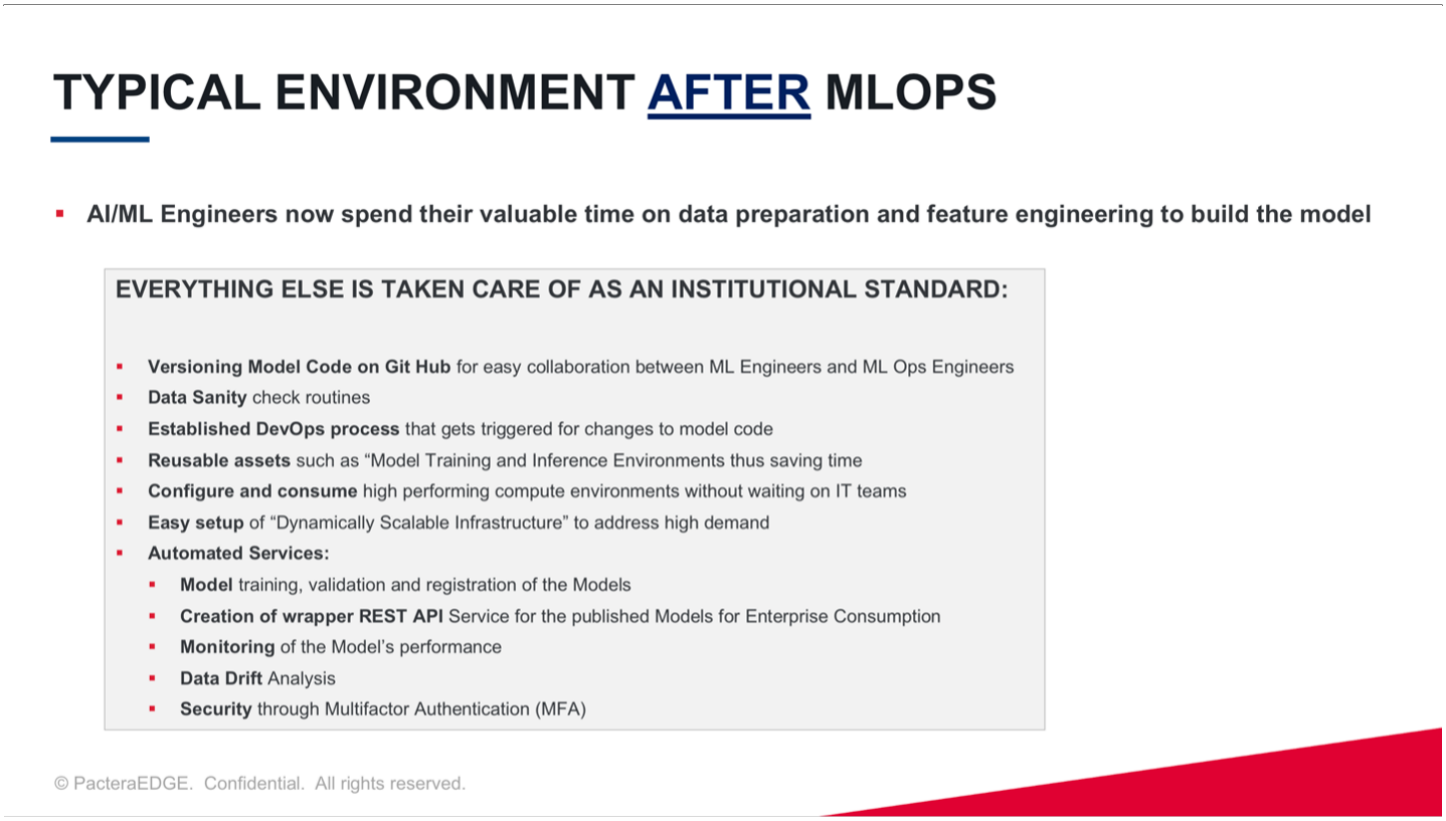
One way to make machine learning more agile and flexible is to adopt MLOps, or DevOps for machine learning. As the name implies, MLOps builds off the DevOps model in which development and operations teams collaborate across the entire software application development lifecycle to develop products at a faster pace than organizations using traditional software development and

infrastructure management processes. With MLOps, machine learning data scientists and engineers collaborate with developers and operations to develop and revise AI-based applications faster. As a result, AI models are faster and more flexible because businesses can retrain them more quickly – which makes them, say, better suited for sensing and responding to the kind of change we're experiencing amid the pandemic.

Benefits of MLOps

With MLOps, machine learning processes are automated to a greater extent, which helps accelerate the process of AI application development. Following is a graphic that illustrates dramatically how well MLOps simplifies AI development. We created these graphics based on our own experiences helping clients implement MLOps:





As you can see from the above illustrations, MLOps does not replace data scientists and engineers. Rather, machine learning engineers now spend their valuable time on data preparation and feature engineering to build the model.

With the adoption of MLOps, development of machine learning models is structured and automated. A team performs checks at every phase of the lifecycle, thereby increasing quality. Data scientists can focus more on developing machine learning models and worry less about retraining and redeployment. The reproducible and scalable workflows enable faster delivery of machine learning-enabled applications. A business can collect model performance data to validate that performance at regular intervals.

The Centific Approach to MLOps

But for MLOps to deliver benefits, businesses need to go about it the right way. At Centific, we help businesses do just that. We design, build, and deploy an end-to-end, future-ready Azure MLOps platform that allows for collaboration between both IT Engineers and Data Scientist. The platform is built on Microsoft Azure to maximize the speed and agility that a cloud-based solution provides. This solution is also an operational framework that abstracts the underlying infrastructure complexities, allowing machine learning engineers to focus on what they do best, thus accelerating the machine learning-driven enterprise capabilities that drive measurable business value. With Azure, every component can be made serverless and be auto-scaled which results in a cost-effective approach of

implementing MLOps.

We provide an effective approach for streamlining the end-to-end machine learning life cycle, in a way that ties into existing DevOps processes and tooling. This approach lets organizations focus more on developing new models at a greater pace. Along with reusable CI/CD implementation, we enforce security and governance with every step we perform. Automatic downscaling of idle resources to cut costs. We also include continuous retraining and performance monitoring of machine learning models.

We've already deployed MLOps for a number of clients. For instance, we developed an end-to-end MLOps platform tailored for a large consumer product firm's underlying infrastructure complexities and with the goal of greater collaboration. Our aim: Unite all the key players across the enterprise to create a capable center of AI excellence. Read more about the work and results here.

Contact Centific

To learn more how we can help you support your business with MLOps, contact Centific.

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