

The ambitious manager is thinking about **increasing the price for products with high demand**, and **putting the unpopular ones on sale** Now if he could do this for all sections in his store, he would be swimming in money... Or would he?



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He would soon realize (the hard way) that without proper provisioning, this only wreaks havoc on his store. The brilliant idea is turning into a disaster. Volumes might be increasing, but margins are eroding. Should he press the **Red Button**?

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DataChef to the rescue! The Pricing Chef Bots would take care of putting price on products, using Al/ML techniques on AWS Infrastructure. They would take other factors into consideration besides stock and demand like <u>Competitor price, expiry dates</u> and <u>economic conditions</u> to name a few.

The manager can take a breath! The revenue graphs are looking good again!



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Introduction

Pricing is a fundamental part of any business. Through this process, the price for services and products are set, with the aim of maximizing revenues and profits in the short and long run.

How is Pricing done?

Pricing can be done both manually or in an automated fashion. To achieve the best result, many factors such as <u>order size</u>, <u>product features</u>, <u>manufacturing cost</u>, <u>demand</u>, <u>competition</u>, etc. have to be considered.



Why Machine Learning?

Capturing the relationship between the factors that lead to the best price often proves to be a difficult task. When dealing with massive amounts of data, traditional statistics probably fails to yield the optimum result. This is when Machine Learning models can learn a lot from massive amounts of data, that would otherwise remain hidden.

How to do it right!

Like any other good plan, pricing optimization needs to be:

• Actionable:

All necessary data in terms of variables and costs of the product should be available and easy to access

• Measurable:

A/B testing needs to be performed to measure the efficiency in the real-life settings

• Impactful:

The minimum expectation is increased profits from sales

Impacts of Pricing Optimization

. Increasing Revenue:

By finding the optimum price for maximum profits

. Business Support

By providing insight and tools for the business as a whole to be able to make informed decisions

• Knowledge Building

By helping to accumulate knowledge to make ever-better AI/Analytics in the future

Potential Pitfalls

Unscalability:

After achieving a significant measured impact in one product line, we need to think in scale rather than building up fast and vertically; we need to prepare a good horizontal basis and then build on top of it.

Black-Box Outcomes:

Although stakeholders primarily care about the measured profits, understanding the dynamics of the action taken is crucial to expanding the project. It is critical to avoid blind assumptions.

Lack of Reusability:

The infrastructure needs to be well-documented, flexible, and organized. CI/CD (continuous integration and delivery) is crucial for effective cooperation and expansion in human resources.



What AWS Offers

Development Environment

AWS offers various services armed with the necessary infrastructure to build high-end models, such as AWS <u>SageMaker</u>, which supports easy processing of data, training the models and deployment.

Production Support

The models developed by SageMaker can easily be shipped to production. DevOps Engineers can leverage other services to put the models built by data scientists to production.



Automation using CI/CD pipelines

CI/CD is a method of continuous delivery, by bridging the gap between development and production while allowing collaboration between the team members.

By applying CI/CD, collaborative minor and major changes can be propagated into production with ease. This ensures availability of the product when new initiatives are being performed.

Replicability

By leveraging Infrastructure as Code (IaC), the workflow can be launched anywhere with a mere click of a button. This reusable recipe can save costs, using the same product in multiple places.

Automatic Scaling

With automatic scaling, resilience and high availability can be ensured. One doesn't need to provision resources and be surprised by peaks and drops in demand. AWS automatically takes care of provisioning the sufficient hardware.