**The Principles Underpinning DevOps**

There are 3 key principles underpinning DevOps which are “Flow, Feedback, and Continuous Experimentation and Learning”. By using DevOps companies can build high quality software products and services quicker by utilizing these 3 principles.

The first principle is Flow. Flow emphasizes on system thinking, optimizing the business process, streamlining it and making it more reliable. This is all accomplished by understanding and increasing the flow of work, removing constraints and enhancing the performance of the complete process. Some common practices that should be used are continuous integration, continuous delivery, continuous deployment, value stream mapping, Kanban and theory of constraints.

The second principle is feedback. This principle is all about understanding and responding to the customers/stakeholders needs by shortening all of the feedback loops. By doing this if a corrective action is needed it can then be taken as soon as possible. There are several practices that should be used such as automated testing, peer review of changes, monitoring practices, status updates, production logs, process measurements and post-mortems.

The third and final principle is Continuous Experimentation and Learning. This involves taking some risks, put yourself out there by experimenting. Sometimes there is failure, but the lesson is to learn from your mistakes and grow from there and learn as you go. In order to succeed you need to practice and master and fully understand your area of expertise. This can be done by setting aside time daily to learn and expand your knowledge. These three principles are all about delivering value to your customer at a fast pace.

Work in progress also known as WIP is a very important concept to consider helping you with your journey in DevOps. Work in progress is the number task items that a team is currently working. By having this in mind you can visualize the capacity of the team’s workflow at any time. Limiting the number of tasks, a team has in progress is a core property of Kanban and enables you to manage the processes that create smooth workflow and keep your team from being overloaded with tasks.

Eliminating hardships and wastes in the value stream can greatly enhance your productivity and quality product that you deliver to your customers. Waste in the development value stream is anything that causes a delay for the customer. Some problem areas that waste can be found are partially done work, extra processes, extra features, task switching waiting on QA or testing, no coding standard, defects and bugs. This can have a very big impact on the over all development time of your projects that can cost you time and money. Keeping waste to a minimum in the value stream should always be considered and improved upon over time.

DevOps is a very important tool to use for any company. The goal of DevOps should be to bring all of the parts together, so that each part is]working at the same time as the other to create the maximum profit out of your time. When you have a development committee that goes through the whole process of developing a new feature or service without checking in with QA until the end. At that point you have lost a lot of the effectiveness of QA because they weren’t able to follow you through the process and missed out on the most important aspects of the understanding of the feature or service. That is why it is important that you have both QA and development working simultaneously so that the process is created and optimized together. This not only speeds up the project as a whole because both parts are working together as a team, but more importantly it ensures that your product is going to be a more refined and effective product.

**References:**

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