

# Transforming Telecommunications with DevOps Layer 7's Success Story



## Introduction

Layer 7, a Mexican Internet Service Provider, specializes in providing Contact Centre Solutions to optimize vital customer processes. Layer 7 has carved out a niche in the telecommunications industry by offering a unique blend of software and connectivity solutions. Despite a compact team of 31 members, Layer 7's innovative mindset drives it to continually redefine what's achievable in this rapidly evolving tech-driven sector.

## Challenge

Layer 7 struggled with challenges in:



Software deployment and server configuration management processes.



The organization was handling these tasks manually across multiple servers, proving to be complex and time-consuming.



Manual deployment involves taking code compiled by developers and transferring it to the relevant server environment.



In comparison, manual configuration management establishes and maintains each server's background to ensure it operates correctly with the deployed code.



This manual approach was straining the company's resources, potentially through high labor costs or inefficient time utilization, hindering their power to scale operations and handle increased workloads effectively.



Expanding the task volume becomes more manageable and efficient if each new bit of code or server requires manual attention.

## Platform Evaluation

To overcome these issues:



Layer 7 sought to adopt a DevOps method.



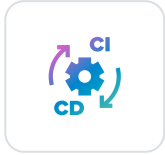
It aims to automate and integrate the processes between IT and software development teams for them to build, test, and even release software more reliably and faster.



Automate deploying code and managing server configurations by adopting a DevOps method. This automation could involve tools automatically pushing code to servers or adjusting structures by predefined settings.



This process is more effective and less susceptible to human error than manual methods, and it allows the organization to streamline its operations, rendering it easier to deal with increased workloads and, therefore,



Additionally, we proposed a complete Continuous Integration/Continuous Deployment (CI/CD) pipeline.



In achieving this, we aimed to eradicate the necessity for manual intervention and thus significantly reduce the time and effort required to regulate the company's servers.

## Client Persona

Layer 7 is a company that strongly emphasizes innovation and harnesses the power of technology to boost the services it provides to its customers. Their fundamental values are efficiency, agility, and a simple response time to customer needs. The company is quite excited about implementing DevOps practices. The essential objective is to shorten the system's development life cycle while delivering features and updates frequently



in close alignment with business objectives. It's an approach that fosters collaboration between development and operations teams, which traditionally worked in silos. By adopting DevOps practices, Layer 7 enhances its services and customer experience. This adoption of DevOps practices supports their commitment to agility and quick response using their customer needs, making it more accessible, allowing them to keep a greater degree of service and quickly respond to changing market or customer demands. Thus, DevOps is a critical enabler for Layer 7 to meet its customer-centric objectives.

## The Core Team

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We collaborated with Layer 7 through pre-sales and involved our DevOps Subject Matter Expert (SME), Kishor. This collaboration helped define the project's scope and create a perfect roadmap to implement DevOps solutions tailored to Layer 7's unique challenges.



## Building a Large Customer Base

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By automating deployment and configuration processes, Layer 7 reduces manual efforts and the time for you to accomplish these tasks. Deployment and configuration are critical steps in software and web development, where a course or system is finalized and created. Automation allows these processes to perform more smoothly, quickly, and with fewer errors than manual methods, thus improving efficiency and reliability.



This automation has allowed Layer 7 to redirect its resources and energy toward improving customer service. With less time and resources allocated to deployment and configuration, the organization could devote more effort to giving an answer to client needs, solving problems, and ensuring an optimistic customer experience. Consequently, with this attention to customer care, Layer 7 saw improved client satisfaction. Happy customers will probably continue employing a service and recommend it to others who may subscribe to an increasing customer base. This increased revenue growth for Layer 7, improving the company's financial health and stability.

## The Solution



We designed and implemented a comprehensive DevOps solution using various tools. We employed Jenkins, Docker, and Ansible for installation and configuration, while DataDog was the monitoring tool. As our solution's Unique Selling Proposition (USP), Layer 7 could deploy code or make changes to all or any servers with only one click, thus saving

Here are a few potential features and services that Layer 7 typically offers:



### **Contact Centre Solutions:**

Provides contact center solutions and includes features like call routing, automatic call distribution (ACD), Interactive voice response (IVR), computer telephony integration (CTI), and a cloud-based contact center solution. Desire is always to facilitate seamless communication between organizations and their customers, optimize response times, and improve customer service.



### **Connectivity Solutions:**

Different internet connectivity services, being ISPs, offer various internet plans ideal for different business sizes and requirements. These services could include broadband, dedicated access to the internet, or MPLS (Multi-Protocol Label Switching) networks.



### **Convergent Software Solution:**

Convergent software solution typically means integrating multiple software or systems into one platform to simplify management and operations. The perfect solution might include integrating the contact center solution with CRM (Customer Relationship Management), ERP (Enterprise Resource Planning), and other business management systems. This may enhance operational efficiency and provide a single view of business processes.

## The Solution



### Professional Services:

Offer professional services, including system design and architecture, installation and deployment, network optimization, tech support team, and maintenance.



### Security Solutions:

Given the increasing significance of cyber-security, Layer 7 might offer solutions linked to security, such as firewalls, intrusion detection and prevention systems, and possibly VPN (Virtual Private Network) services for secure communication.



### Training and Support:

They likely train their customers on effectively utilizing their solutions and continuous support to resolve any issues.

## Technology Stack



**Jenkins**



Our technology stack included BitBucket for version control, Jenkins for continuous integration and deployment, DataDog for monitoring and logging, and Ansible for configuration management and application deployment.

This tech stack was carefully chosen to check Layer 7's requirements and provide an effective solution.



## Key Considerations

The key goals were to optimize specific system and service delivery aspects. Here's a breakdown of the main element terms and points:



### Reducing deployment frequency:

The team desired to decrease the number of times they had to deploy the program or system, which suggests they were aiming for more stable, long-lasting solutions instead of frequent, minor updates.



### Decreasing lead time:

They aimed to lessen the time passed between the conception of a task and its delivery. A smaller lead time means faster product or service delivery to the client or user.



### Lowering defect rates:

It identifies minimizing the number of faults or bugs in the program or system. A lower defect rate often contributes to an even more stable and reliable product.



### Increasing customer care:

Ultimately, the team aimed to enhance the general experience because of their customers, likely by achieving most of the above goals.

Moreover, DataDog is an analytics platform for developers, IT operations teams, and business users. It enables them to monitor systems, applications, and services, gather and analyze data, and troubleshoot issues. Here, it has been used to track key metrics like the number of build runs (how the codebase is compiled and constructed into an executable program) and average deployment time (how long it is required to produce new software or updates).

Lastly, the client was primarily accountable for security measures; the team ensured that their DevOps solution (i.e., their practices for combining software development and IT operations) complied with best data and system protection practices. This likely means they followed industry-standard guidelines and protocols to help keep data secure and systems safe from potential threats.

## The Impact



Implementing our DevOps solution generated significant operational efficiency improvements for Layer 7. The goals of DevOps include increasing deployment frequency and achieving more dependable releases. Before implementing DevOps, Layer 7 manually deployed code and made configuration changes, which consumed resources and generated errors. With DevOps, these processes were automated, which not only saved time but also reduced the occurrence of mistakes. Consequently, the product quality, reliability, and performance of Layer 7's software improved. Further, the transition to DevOps practices had additional benefits for Layer 7's operations. There is an apparent escalation in customer care, likely due to the improved quality and reliability of the software. The automation and enhanced processes triggered significant cost savings, presumably because less time and fewer resources were needed for deployment and configuration. These cost savings and improved product quality generated increased revenue growth. Thus, Layer 7's experience demonstrates implementing DevOps may have substantial short-term and long-term benefits, including operational efficiency and software quality to cost savings and revenue growth.



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