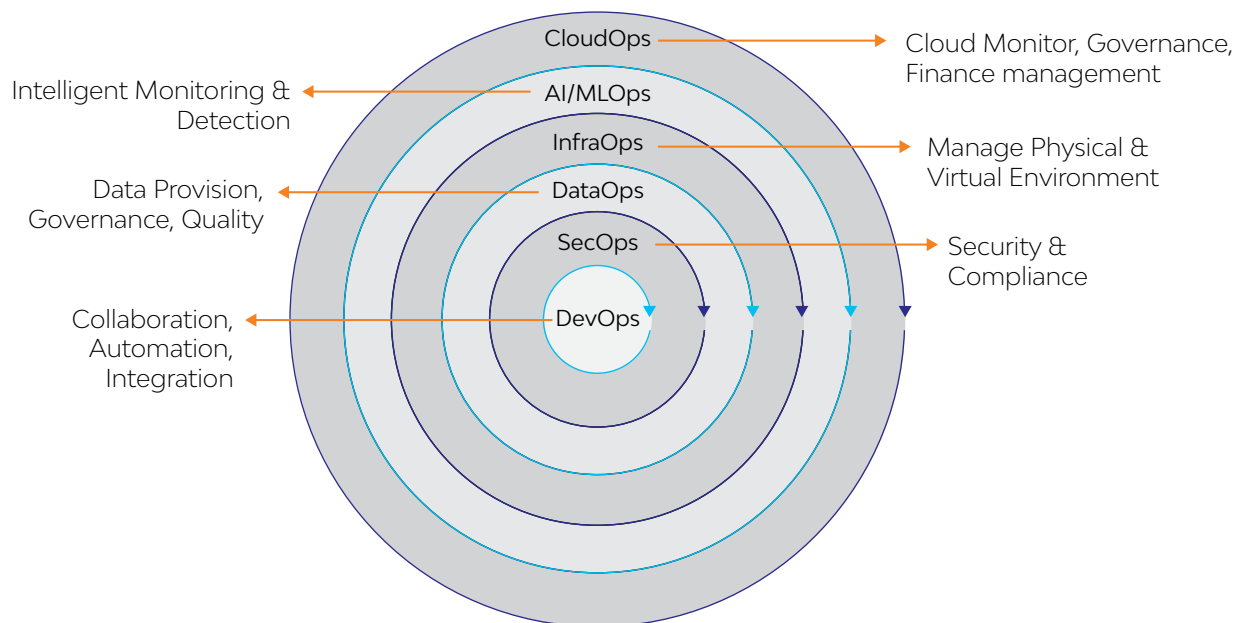# Rise of xOps

Table of Content

Demystifying the term 'X'Ops

With the current technological advancement and distributed remote work culture, there is huge demand on operational activities to release a reliable and secured business application. In this digital age a business application is not just a code, it's a combination of data, high-available infrastructure, on-demand cloud environment. LTI has designed a 'X'Ops framework to describe how business operations and customer experiences can be enhanced by stitching the development, security, data, infra and cloud operations to ensure higher reliability, embedded security, and automated governance.

The 'X'Ops Ring

In the journey towards IT modernization and transformation, automation is the key element for a successful business outcome, and it doesn't limit by implementing DevOps. Over the last few years, there have been various major Ops functions got derived from the core DevOps. 'X'Ops ring is defined as extended DevOps capabilities to include other Ops functions like SecOps, DataOps, InfraOps, AI/MLOps and CloudOps.

> " *By 2024, organizations will lower operational costs by 30% by combining hyperautomation technologies with redesigned operational processes".*
>
> - Gartner prediction

Intelligent Monitoring & Detection

Data Provision, Governance, Quality

Collaboration, Automation, Integration

CloudOps
AI/MLOps
InfraOps
DataOps
SecOps
DevOps

Cloud Monitor, Governance, Finance management

Manage Physical & Virtual Environment

Security & Compliance

DevOps

Defining DevOps:

DevOps is a shift towards a next-gen operating model defined through collaboration of people, automation of processes and integration of tools. DevOps aims to solve the long-standing challenges in software delivery like delay in time-to-market, high operating costs, vulnerable delivery, sustaining productivity and quality.

Need for DevOps

DevOps has become a need in IT ecosystem to eliminate silos, automate processes, faster release cycle, secure delivery, increase collaboration, automated governance, and cost optimization through CI/CD best practices.

Business Benefits/Outcomes

- Faster time to market
- Higher reliability
- Faster innovation
- Increased collaboration
- Enhanced customer experience

SecOps

Defining SecOps:

SecOps is a discipline and practice of implementing effective technical controls to defend the entire IT ecosystem from vulnerabilities through right strategies, policies, processes for reliable delivery. SecOps is aimed to develop a highly secured software application by embedding security interventions and automating the security scans across SDLC.

Need for SecOps

SecOps has become a need as part of DevOps to early identify attacks with greater speed and remedying them before it causes more severe business impact. It is also essential to keep systems and data secure with regulatory compliances to reduce risk and improve business agility.

Business Benefits/Outcomes

Faster vulnerability detection and resolution

Improved threat awareness and transparency

Earn organisation reputation

Increased customer delights

DataOps

Defining DataOps:

DataOps is a blended mix of data engineering and operations to derive data from multiple sources and reliably deliver to many users. It also aims to promote automated data management lifecycle to incorporate governance controls and optimize the performance from ingestion to delivery of data for insights and analysis.

Need for DataOps

DataOps is needed to manage data drift by ensuring continuous data flows through automation. It aims to operationalize data management life cycle into a continuous and reliable flow of data to the end user with business insights and value.

Business Benefits/Outcomes

Faster data delivery

Real-time insights

Better quality data for analysis

Better customer experience

InfraOps

Defining InfraOps:

InfraOps is about automating the physical and virtual infrastructure components to ensure infrastructure availability and readiness for all the scalable business needs. InfraOps aims to achieve innovation in managing infrastructure capacity, redundancy, availability, and performance.

Need for InfraOps

The infrastructure should be capable to scale at the speed of business demands, there is a need to automate various infrastructure operations for on-demand provisioning, configuration management, performance tuning and disaster recovery

Business Benefits/Outcomes

Faster infra readiness

Immutable infra

Faster disaster recovery

Cost Optimization

AI/MLOps

Defining AI/MLOps:

AI/MLOps is an innovative way of operations applying artificial intelligence and machine learning to simplify the immense complexity and quantity of data generated by the modern IT ecosystem and intelligently monitor to detect and prevent outages, maintain uptime, and attain continuous service assurance.

Need for AI/MLOps

The data has become the key element in all IT operations, and it has become important to define and manage data. There is a need to automate IT operations processes, including event correlation, anomaly detection, and causality determination through data models and intelligence.
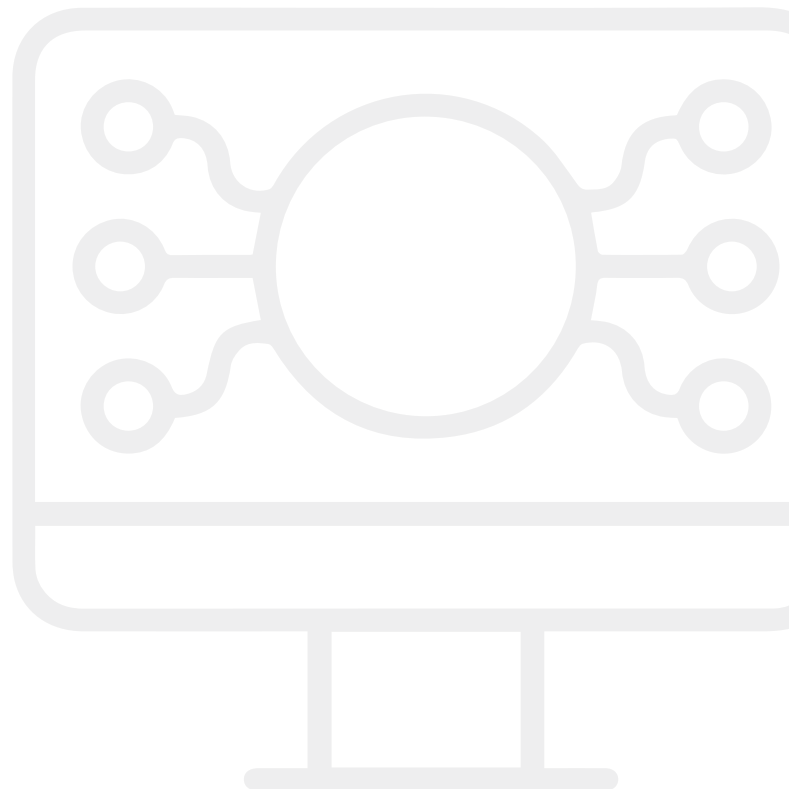
Business Benefits/Outcomes

Real-time data analysis

Reduce false positives

Anomaly detection

Operational excellence

Continuous intelligence

CloudOps

Defining CloudOps:

CloudOps is a practice to establish operational process to optimize IT services within the cloud environment. The objective of CloudOps is to focus and monitor the cloud operations to control cost, minimize security risks, improve efficiency, and accelerate deployments.

Need for CloudOps

Many enterprises are migrating their workloads to Cloud and it becomes essential to accelerate business agility, increased visibility across full stack, automate migrations/deployments with unified governance.

Business Benefits/Outcomes

High scalability

Easy accessibility

High redundancy

Better Governance

Conclusion

The increase in need for speed, faster time to market and collaborative approach to IT strategy has led to the rise of various Operations model. These models are designed specifically to bring together the business functions and IT teams to deliver a shared business outcome. Through this 'X'Ops blog series we aim to address this new approach to IT, this part one introduces you to the various operating models that exist and in our subsequent blogs, we will be deep dive into each of them.

LTI

About the Authors

R. Vijaykumar Head- DevOps Practice

Vijaykumar is a Principal Architect, specialized in DevOps and Cloud architecture at LTI. He has more than 23+ years of IT experience and transformed himself as an DevOps evangelist in designing solutions and delivering services to enterprises. His latest area of interest and focus areas are containerization and DevOps on Cloud. Besides work, Vijay is fond of cars and likes to go for long drives.

S. Rakesh Kumar DevOps Architect

Rakesh is a DevOps Architect for Cloud Practice at LTI. He has 12+ years of IT experience and transformed into a SME in DevSecOps, Container and multi-Cloud technologies. Rakesh helps enterprise customers in transforming their DevOps journey, leveraging his experience and DevOps best practices. Outside of work, Rakesh enjoys canvas painting and playing sports

A Larsen & Toubro
Group Company