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FIVE TECH TRENDS ENTERPRISES SHOULD NOT MISS OUT IN 2023

Synopsis: Technology maturation is an ongoing process, and organizations must have a keen eye on the technological landscape, align to what is beneficial, and invest in platforms that would yield outcomes. This POV by the Movate Editorial Team looks at five of the most promising technological trends today and explains why they are the next game-changers.

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01 Introduction

The demand and dominance of technology have never reached heights like before. Today, everything we do as consumers or within a business has an imprint of some tech framework. And digitalization has exacerbated the need to thrive or perish. With an ever-evolving technological core, enterprises are constantly facing the balance of power between upgrading their technical infrastructure and viz powering memorable experiences for customers. This POV looks at the five most promising, accepted technology frameworks that will transform the way enterprises work in the future.

02 Trend #1: Generative AI

The significance of AI (Artificial Intelligence) has caught up, and the world has seen its transformative effects in action. Generative AI is the new kid on the block that uses AI, large models, and datasets, through which it is trained to handle and accept data and process them more like humans do. By training the application this way, generative AI can converse with near-human accuracy and engage in meaningful conversations.

Backed by training and modeling and access to a heterogenous set of data and models, AI can help enterprises in many functions, such as customer support, testing, application development, and smart automation that accelerates many functions in an enterprise space.

GENERATIVE AI

Generative artificial intelligence (AI) describes algorithms (such as ChatGPT) that can create new content, including audio, code, images, text, simulations, and videos. Recent breakthroughs in the field have the potential to change the way we approach content creation drastically.

-Source: McKinsey

AI specifically trained to write application codes is called TuringBots (an ode to Alan Turing – the father of artificial intelligence.) A Forrester report says, "TuringBots will write 10% of worldwide codes and tests by leveraging AI & ML and existing applications codes." This will eventually transform an application developer's profile from coding to managing and overseeing development because most of the hard work will be automated with checks and balances in place.

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2.1 Generative AI has the power to transform content marketing

Riding on its popularity, generative AI is all set to transform marketing and content creation by providing stimulating forms of interactive and immersive content using a mesh of multimedia formats that span audio, video, images, and text and tapping into a large conversation data model to produce human-like content. There are many examples to showcase, like (Chat GPT, Google BERT, and DALL-E).

2.2 Explainable AI (XAI) to address risks and bring transparency to enterprise AI

While AI and its applications have the potential to augment humans in their work, the lack of a clear understanding of how these applications perform creates a sense of distrust when these models are used in real-world productions.

Explainable AI attempts to unravel an AI application's "why" and "how" to help humans understand how the model arrives at its decision. The goal is to make humans more comfortable and trust the model's logic to make decisions.

EXPLAINABLE AI

Explainable AI Is a set of processes and methods that allows human users to comprehend and trust the results and output created by machine learning algorithms.

Explainable AI helps end users understand an AI model, the intent for which it was created, and the expected output. Since these models are the handiwork of synthesized data, it is critical to understand the implications of utilizing such models in real-world scenarios. In the case of enterprises, explainable AI will be used to verify, govern and track how AI models arrive at their decisions. It attempts to bring the black box of testing into a transparent glass box so that everyone can see, understand, and trust the steps involved in arriving at decisions. One bad move can spell huge losses, distrust, and lowered CX. Technology evolutions will demand innovative business models, and enterprises will increasingly depend on explainable AI.

2.3 Enterprises will be using MLOps to bridge the gap between machine learning and data engineering

ML (Machine Learning) is the core process that helps create models and datasets with which the model trains. The model is fed numerous datasets to help sharpen its prediction curve, accuracy, efficiency, and scalability. But the problem lies in governance once these models are implemented, giving rise to a lack of ROI and reducing its scope to a costly experiment. In a real-world scenario, enterprise businesses need the help of many models and a ton of training data. The speed, accuracy, and efficiency in turning these models into viable revenue are where MLOps as a practice can help. There's also the latent need to scale ML operations to the business needs and demands.

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MLOps, or Machine Learning operations, is simply a combination of machine learning and DevOps principles. It combines machine learning and data engineering practices to effectively engineer and deploy ML models. MLOps concerns itself with the entire ML lifecycle, model generation, CI/CD practices, delivery, and deployment with analytics and governance. The diagram below shows how the lifecycle of MLOps.
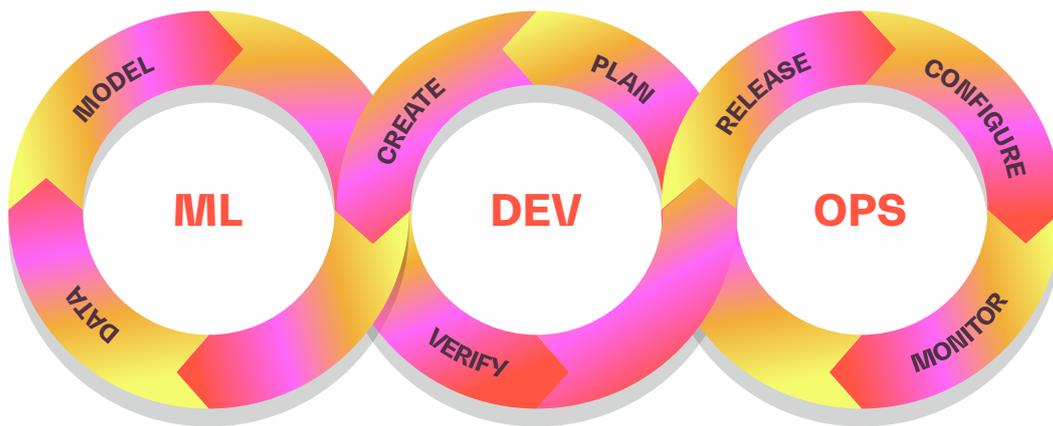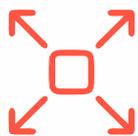

Figure 1: MLOPs Lifecycle

Some key benefits of MLOps for enterprises:

Scaling:
Better model and data management allows an enterprise to scale ML adoption enterprise-wide

Trust:
MLops increases trust within a dynamic enterprise environment by successfully creating repeatable automation, testing, and validation processes.

Data management:
MLOps improves data management through iterative processes, reducing process cycles, implementing best practices through insights, and reducing development time.

Compliance:
With proper data management and process control, MLOps ensures compliance with regulatory standards and de-risks teams from regulatory bottlenecks.

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03 Trend #2: Digital automation at scale will build enterprise resilience

The 2019 pandemic has taught us a few lessons on resilience. Though we have surpassed difficult times, businesses still struggle to return to operational standards. Forrester Research says, "To ensure business continuity during an uncertain economic environment, enterprises will move 10% of automation budgets from transformative initiatives to build operational resilience". This couldn't be further from the truth and the need for most enterprises.

More than executing transformative goals, enterprises should build upon the necessary in-house framework that gives them operational resilience. It is NOT an option or a can-have BUT a clarion call to thrive. The executives' focus would be to address known issues and risks first and keep delivering on business continuity – eventually leading to operational resilience. For example, executives could redirect funds set apart from ML-based projects to build self-reliance or tight supply chain gaps to improve their business posture.

3.1 60% of the IT infrastructure offerings will consume automated cloud platforms & tools

The surge toward cloud platforms will continue as organizations try to clean up their spending. Automation and growing dependence on tools and accelerators make cloud cost management a hot topic among enterprise organizations as they try to balance cost-cutting and innovation. And to further check on spending, enterprises will look to strengthen their cloud-native layers and invest in them. They will invest more in distributed computing models that can work with various new-age technology domains.

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3.2 25% of analytics programs will be shelved due to poor ROI and costs

Many analytics pursuits will be shelved or halved due to budget cuts or pressure from senior management unless they show clear-cut value. Forrester reveals that 29% of, data management, data science, and analytics technology decision-makers anticipate investment in their domain to stay the same. With mounting pressure to achieve the same results with reduced investment, many data leaders will reevaluate priorities, rationalize costs, and improve their analytics talent to spot opportunities.

3.3 Adoption of low-code or no-code platforms across the enterprise will empower citizen developers

Continuing the premise of delivering more with less, enterprises are looking at low-code platforms that easily integrate with today's tech platforms. Low code helps enterprises alleviate development costs and reduces development time. This move also empowers citizen developers to thrive.

Citizen developers can help enterprises by devoting their experience and expertise to creating custom applications that boost productivity using low-code or no-code platforms. IT departments are usually floored with many requests that leave them exhausted and overwhelmed. They need solutions that scale. Most business users will vouch for their favourite BI tool and won't let IT take them away.

> **CITIZEN DEVELOPER**
>
> A citizen developer is an employee who creates application capabilities for consumption by themselves or others, using tools that are not actively forbidden by IT or business units. A citizen developer is a persona, not a title or targeted role. They report to a business unit or function other than IT
>
> *- Gartner*

By employing low code/no code frameworks, users with little or even no experience in coding can start maintaining and creating applications that help reduce the load on IT teams organically. In retrospect, enterprises gain from this organic acceleration as they can shave off many variables and become more agile from a business perspective.

Some important stats that make the call for citizen development:

88% of IT leaders
will see increased workloads in the near future.
Rapid and innovative solutions to new workflows and automation are critical.

62% of organizations
have a growing IT backlog that they cannot fulfill.

The top challenges in IT
are customer privacy, speed of digital transformation, and data integration.

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04 Trend #3: Cybersecurity complexity will increase due to changing technologies

Cybersecurity has always been a worrying corridor for all enterprises because of the stored data value. And the threat, intensity, payload, and devastation amplifies with each attack. Almost every security leader agrees that a major disaster is only an attack away. Enterprise organizations should look at their security posture, consolidate their security stance, and be prepared.

Here are some stats that Gartner has put forth for the next two years.

By 2025,
80% of enterprises will adopt a strategy to unify web, cloud services, and private application access from a single vendor's SSE (Security Services Edge) platform.

By 2025,
60% of organizations will use cybersecurity risk as a primary determinant in conducting third-party transactions and business engagements.

60% of organizations will embrace Zero Trust as a starting point for security by 2025. More than half will fail to realize the benefits.

4.1 65% of the world's population will have their personal data covered under modern privacy regulations

With increasing attacks on data security, enterprises are taking significant steps to incorporate baseline security measures that echo data regulators like GPDR. Lawmakers across nations are trying to build trust by enforcing these data regulations so that they are more in tune with current standards and can address data security issues efficiently. The Covid pandemic was one such instance that led enterprises to look back at their data security posture and make necessary changes to their security and risk practice.

4.2 Enterprises will safeguard the hybrid workplace model by replacing VPNs with Zero Trust networks

The hybrid work model has been a boon for many, but it brings a deadly payload. Since work is now decentralized, data is also stored at multiple locations. More locations – means you need more investment in covering these locations, which is what hackers can easily exploit. Traditional IT workflows were designed to protect everyone within a validated network, but the veracity and intent in today's attacks are far worse – which leaves enterprises with no option. Enter Zero Trust Networks (ZTN).

A Zero Trust Network is just what it is. It trusts no one – even users within a corporate network's perimeter or access. It is a far more holistic, efficient, and logical approach to providing security, especially within a hybrid working model, which is now the norm. This means that every user must be constantly verified and validated before they can use a network resource using multiple authentication methods. Garter estimates that by 2025 most VPNs will be converted to zero-trust networks.

4.3 Adoption of low-code or no-code platforms across the enterprise will empower citizen developers

As security attacks become deadly, the need for more challenging and comprehensive security measures looms even higher. Security breaches and attacks come in all sizes and shapes. Enterprises will need innovative cybersecurity measures that protect all layers of network assets and not just the network perimeter alone. The primary intent of creating a cybersecurity architecture network is to provide holistic preemptive protection against cyber-attacks across the organization's IT landscape.

Cybersecurity spending on pace to surpass $260B by 2026
- Gartner

The shift is attributed mainly due to the increase in remote/hybrid work, shift from VPNs to ZTNs (Zero Trust Networks) and increased adoption of cloud-based delivery models.

A cybersecurity framework protects an organization's assets through network security protocols and standard operations. The framework also specifies how these components should mesh, and work together. A cyber security assessment involves the following features:

Network Elements:
Nodes, computers/terminals, communication protocols, connections, and topologies

Security elements:
Cybersecurity devices like firewalls, Intrusion detection, and cybersecurity software

Security standards and frameworks:
Cybersecurity framework architecture standards

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A well-implemented cybersecurity
framework would generate these benefits:

**Improves overall
security across the
organization**

**Provides preemptive
threat control
management**

**Automated security
at all enforcement
points**

**Reduced TCO and
increased operational
efficiencies**

4.4 Data-driven security intelligence will become the backbone of the cloud ecosystem security

The state of IT operations within an enterprise are like a war room. Everyone is on high alert, ready to spring into action whenever a threat is detected. Advanced threat vectors are much ahead of the pack and have more deadly payloads.

Handling enterprise security should not be based on events that have happened but should be one where you are armed with enough data and intelligence to prevent one. And today, it makes the most sense to have it plugged into the cloud where everyone parks their data. Other aspects, such as better threat monitoring, unified dashboards, and preemptive monitoring, add to the cause. Most organizations still employ many third-party tools for security and tracking, resulting in a lot of overhead and unnecessary effort wastage. Enterprises should ensure that system security is not just a function of the IT team but a core objective of the organization.

05 Trend #4:
Cloud spending will stay mainstream amid economic headwinds

5.1 In 2023, 40% of firms will consider a cloud-native-first strategy to achieve agility and efficiency while reducing costs

The cloud has established itself as a formidable delivery platform and definitive alternative to most business needs. The continual growth has made most start-up enterprises go for a cloud-first approach. But most of the larger enterprises – ones with many layers of legacy software, and integrators, find the journey challenging, juggling the layers together to move forward.

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As businesses move away from the worldwide attack that paralyzed most organizations, their first requirement is to get back what they lost – and get that quick. The best alternative available is the Cloud. A research note from Forrester indicates that "In 2023, 40% of firms will consider a cloud-native-first strategy to achieve agility and efficiency while reducing costs".

The reason behind this accelerated cloud deployment is Containerization. Containerization is having the application source code with the necessary OS binaries packaged together to run on a cloud or a non-cloud environment. Enterprises are now replacing legacy virtual machines with containerized applications that can be instantiated effortlessly. Enterprises are creating infrastructure backbones that power distributed computing to handle loads more efficiently using modern tools powered by AL/ML to run apps on IOT, Edge, 5G, etc.

5.2 With the rise in data consumption and IT modernizing initiatives, worldwide spending on cloud services is set to reach nearly $600 billion in 2023

There is a continuous focus on cloud spending, and worldwide spending is projected to increase to around 600 USD by the end of 2023. The main driver fueling this growth is the IaaS segment, but figuratively, organizations can spend only what they have. Cloud spending would decrease if organizations had a cap on their IT spending. Still, with the feverish pace of cloud adoption, the journey to the cloud will only accelerate because cloud migration will not stop now. There will be a growing and greater focus on IaaS as enterprises continue to optimize, migrate and accelerate IT modernization.

5.3 As the demands for stringent data sovereignty intensify, the cost to avail of sovereign cloud will rise manifold

Sovereign clouds have assumed significant importance due to the increased visibility, transparency, and control of how different nations handle and store data. The basic premise is where data resides, how it is stored, and who controls it. The move for sovereign clouds is to ensure fair practice, transparency, and accountability for entities that handle such data.

Sovereign clouds usually present a considerable investment due to the function and scope of the services involved. Sovereign clouds also require more protection and audit compliance than a standard setup. Sovereign clouds are primarily used in a private or semi-private or hybrid form.

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06 Trend #5:
Rise of new workforce models to face skill shortages

The pandemic accelerated the adoption of the Work from Home/Anywhere or the hybrid model. Consequently, the way worked changed. The biggest challenge enterprise organizations face today is filling up of tech roles and the lack of skills. The gap to fill these tech posts takes at least three months, which spills onto project deadlines and sluggish development.

In that light, 2023 will be the same, as digital transformation is still hard on those taking that journey. In 2023, talent acquisition activities will continue to be challenging as there are no takers for novel and niche skill sets like low code and AI development. Enterprises will also face shortages across positions like data analysts and decision-makers in automation projects. The biggest challenge enterprises would face this year is getting employees to adopt and use automation technologies within the organization.

To manage this tech crunch, employees need to look at alternatives. Most enterprises have started working with freelance agencies such as (Catalant, Topcoder, Toptal, and Upwork). This presents an equal opportunity for talent management teams to look within the organization and identify folks who can crossgrade and upgrade their skills internally. Firms will manage and tide over the tech crunch by investing and recycling talent wherever possible. This will also help enterprises with lean talent manage the situation organically. The gig network is another compelling alternative to managing, scaling, and delivering support through various skill sets that are only sometimes found mainstream.

About Movate

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