ACHIEVE 'DIGITAL REALITY' WITH AN AI-POWERED CORE ENGINE

As organizations across industries gear up for digital transformation, one area that will need to undergo a paradigm shift is IT operations. Today's organizations face a number of hurdles in service experience caused by deep siloes and fragmentation in software and hardware, the continuing use of legacy applications, consumerization of IT, and inadequate IT budgets to transition to new technology. Siloed functional infrastructure and operation towers make it difficult for organizations to unify administration for high service delivery to both internal and external users. Managing heterogeneous IT infrastructure for continuous business service availability has not only become increasingly complex, but is constantly changing in response to business needs.

Operational	Governance	User Experience
Co-Existence of legacy and emerging technologies	**Fragmented IT** landscape with multiple providers and toolsets	Newer expectations – **Consumerization** of IT
Silo'd Organization – SLA's green individually but red collectively	Lack of **transparency** in service provider chargeback and SLA's	Longer cycle times impeding **time-to-market**
High cost of operations due to task redundancy and tribal knowledge	Pitfalls in **enterprise policy** and regulatory standards compliance	Inability to visualize true business SLA impact… **'IT is a Black-box'**

Service experience challenges that digital organizations need to address

This Point of View dwells on the challenges organizations are likely to encounter in the area of IT operations as they transition to digital, how organizations can navigate these challenges, and the type of solution they are likely to need.

Address Infrastructure and IT Operations Challenges to Become Agile, Cognitive, and Driverless

To upgrade IT operations, organizations will need to first shift the resiliency of their infrastructure from hardware to software. In a digital organization that needs to be responsive and agile, hardware will need to be abstracted and controlled; and fragmented hybrid IT infrastructure will have to be re-conceptualized with software at the core. This will do away with the siloes created by hardware, enable organizations to leverage Artificial Intelligence (AI) and Machine Learning (ML) for insights and pave the way for AI-led IT Operations for greater operational productivity.

As software comes to drive IT operations, skills will be reorganized. Presently, IT relies on specialized expertise in Windows, Database, Middleware, Linux, Storage, Hardware, etc. Often, IT personnel specialize on a single technology or platform, and work in siloes. In a truly digital scenario these siloes will cease to exist and skills will be based on problems and the patterns of problems rather than on the domain of technology. Personnel will have knowledge of full stack operations, infrastructure, and software. These personnel will be acquainted with the fundamentals of software-driven operations and access data from all functions of infrastructure as part of their work. They will also capitalize on the principles of DevOps – Continuous Integration, Continuous Delivery.

In this software-driven hybrid digital model of AI-powered IT operations, human FTEs (full-time employees) will be supported by digital FTE's in three ways. One, by offering deeper insights into data and amplifying human potential. Two, by addressing a particular functional problem, and three by being 'task specialists', such as back-up across multiple technologies. As knowledge entities, digital SMEs encapsulate the functional knowledge of IT so that it is captured, self-learned, and exploited for automation. The bots specialize in executing self-healing automation within specific domains and

business processes and scale to need.

Here's an example of a digital SME in action. Tom and Dave were operations engineers with traditional operations jobs. Tom was a SME (L2 function) while Dave was an eyes-on-glass monitoring agent (L1). Their two-person team was trained to understand insights generated through big data and ensure smooth operations. Their process can potentially be replaced by a single person who can leverage analyzed data, predict issues, and recommend corrective actions. This can be enabled by a combination of cloud for real-time actionable insights, and digital native FTE's who execute recommended action. The end result, higher operational productivity and better efficiency for business.

IT Operations in a digital organization will rest on three pillars

Powered by software, the new age Hybrid IT ecosystem will be agile, resilient, cognitive, and cost-effective. It will be powered by three pillars, namely,

1. **Tranquility** – Where in operations are automated and provide continuous visibility into functions

2. **Agility** – Such that the infrastructure is agile enough to re-engineer workloads and self-heal

3. **Experience** – So that organizations can redesign user experience to be business-centric. For instance, rather than address a network component that is not working, the new method of operations will enable organizations to review the business impact of the network component, measure impact should the application go down, and create an SLA based on criticality indicators

The Integrated Service Experience Transformation Framework to go Digital

Is your organization ready to rewire its IT infrastructure and uplift the service experience of users? Here is a framework that can set you on the path.

• **Conscious and Cognitive Modernized**

Infrastructure – So that organizations can establish a Hybrid IT paradigm which encompasses an intelligent and responsive AI-powered Hybrid IT landscape consisting of hyperconverged technology stacks, containerized application services, and hybrid cloud consumption which promotes contestability and the ability to weave a common management fabric across this Hybrid IT ecosystem for real-time business service visibility, KPI performance insights and improved availability of business services. Essentially transform for 'Sense and Response'

• **Integrated, Context-aware, Autonomic and Self-Learning Operations Model** – Establish an enterprise business performance heartbeat mechanism as the center-piece of the IT Operations model by having the ability to listen to all enterprise data sources, derive meaningful insights by establishing enterprise business and IT context across every business + IT entity and orchestrate appropriate response mechanisms for autonomic decision support or self-learning

• **Operations powered by 'Digital Natives – Robots and Humans'** – Create a 24*7 optimized staffing model based on 'Digital Natives – Robots' and Humans as compared to just a people-based staffing model with automation as a cost lever. Establish an 'exception only' model for human intervention with the goal of improving overall service experience. Digital personas are personalized assistants to human personas in the IT operations, and amplify human ability to business and aid in decision-making through predictive contextualized recommendations and offloading of judgment-based reasoning through cognitive automation

• **Business KPI driven Service Delivery Outcomes** – Establish a next generation enterprise configuration management database which focusses on measurement of Business KPI SLA's as compared to traditional industry

norm of only ITIL based IT response SLA measurement framework. This includes transforming the configuration management database to be able to recognize Business KPIs, business attributes, application configurations and user behavior as the required 'Configuration Context' for being able to measure business outcomes as part of the IT operations daily reporting.

• **Uberized Marketplace Style IT Consumption Model** – Enable an enterprise marketplace as a combination of SaaS Services, Cloud IaaS + PaaS Services, internal business applications as well as a Vendor/Provider API/Microservices marketplace wherein every business enabled IT service is available for rapid consumption via subscription management, automated metering, automated cost center chargeback and showback mechanisms. The marketplace consumption is enabled via digital personas and the attributes of the persona's job profile or point in time knowledge need. The Digital Persona Entitlement framework for data would be need based instead of role based.

Collaborate with the Right Technology Partner

With software playing a controlling role in IT operations, the future will be driven by a digital platform that will gather data from multiple sources, and converge it into a single stream. Data science will analyze data, and users will receive ML and AI-powered recommendations. These will be implemented by a combination of digital and human FTEs. Rewiring an organization's IT operations to deliver on the digital promise is best implemented with the support of a highly experienced technology partner. An ideal partner should offer the following;

• Unified view across events from infrastructure, applications, business processes with the ability to holistically correlate events without leading to blind-spots. With this view, IT operators can automate correlation of issues and anomalies, improve MTTR, and ensure

higher system availability.

- Integrated business/IT Ops Command Center as a one stop shop that supplies context and a snapshot of the entire Hybrid IT ecosystem.

- Command Center that automatically clusters, classifies, and de-duplicates alerts, events, and tickets using advanced data analytics and ML techniques. It enriches alerts with enterprise metadata such as configuration item, app attributes and organization hierarchy attributes.

- Knowledge repository that supplies necessary knowledge of issue

resolution and actions in the form of AI/ML models, rules, and policies.

- Self-healing automation libraries that ensure elimination of critical P1 incidents through predictive and proactive sensing and remediation through workflows.

The use of ML enables users to speed up the correlation of incidents so as to quickly arrive at the root cause. This, in turn, allows for quicker resolution. With time, IT operations staff shall also be able to instruct the solution to pro-actively take action to bring systems to their desired states.

Conclusion

Software-centric IT operations will offer users rapid visibility into problems and provide recommendations for action. To ensure your organization seamlessly improves the service experience of its IT operations, partner with a vendor who has engineered a platform which includes a module for data science, digital FTEs, an engine for orchestration, and a tool for business assurance. This solution should be able to provide visibility right from individual applications to the whole infrastructure. Also ensure your technology partner has a stream of personnel trained as full stack operators and specialists on Infrastructure as a code, DevOps, and automation technologies. In summary, an AI-powered core can help machine intelligence amplify the human workforce by creating harmony between digital and biological intelligence. As digital natives take over tasks, human engineers will have the opportunity to dedicate themselves to enhancing core business KPIs. This is where the true power of 'Digital Reality' with an AI-powered core engine will be evident.

About the author

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Saju has two decades of experience in IT infrastructure and Cloud in the space of consulting, advisory, solutions, sales, and delivery. At Infosys, he heads the Service R&D and Automation Products and Platforms for Cloud and Infrastructure Services. His industry experience makes him a Cloud and Infrastructure transformation leader and a Cloud computing expert who has advised Fortune 200 companies on strategy. He has played various leadership roles and built successful teams, managed cutting-edge technology, nurtured a partner eco-system for business growth and demonstrated content, entrepreneurial and thought leadership.

Infosys Cobalt is a set of services, solutions and platforms for enterprises to accelerate their cloud journey. It offers over 14,000 cloud assets, over 200 industry cloud solution blueprints and a thriving community of cloud business and technology practitioners to drive increased business value. With Infosys Cobalt, regulatory and security compliance, along with technical and financial governance comes baked into every solution delivered.

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