MICROLAND®

Making digital happen

Achieving MinimalOps with minimal angst

Satish Sukumar
Chief Automation Officer

Microland is making digital happen for enterprises around the world.

The world that exists: Legacy habits and infrastructure prevent many enterprises from smoothly delivering digital experiences that delight.

The world that Microland is creating: The IT departments of legacy enterprises act as nimbly as the most darling of tech startups. (Thanks to assisted and augmented models.)

A tale of two very different digital experiences

About a decade ago, the world of IT bifurcated into two quite different camps: IT designed to serve enterprises and IT that sprang up to support the audacious visions of ambitious tech startups. As these two types of IT organizations evolved, they served up quite different experiences to their end-users. The experience of enterprises was one of planned downtimes, occasional outages, unpredictable performance (despite predictable user volumes), new features released every six months or so and a rather caustic approach to user friendliness. Conversely, tech startups delivered web scale, consistent performance (even with unpredictable surges in demand), lack of downtime – planned or otherwise - feature updates released at bewildering speed and intuitive interfaces that put the help desk out of business.

MICROLAND®

Tiny IT teams deliver experience and loyalty for start-ups

Start-ups such as Uber, Spotify, and Airbnb began to define consumer expectations of convenience and delight delivered by a sublime digital experience. And they did this with teams that were tiny compared with the size of an average enterprise IT department. Today, as more and more consumer experiences happen on digital platforms, end-users expect an “always on” world where apps deliver immediate – or near immediate – gratification. Brand loyalty hangs in the balance. Obviously, enterprises are taking notice: their end users internally and externally are forcing the issue. And CIOs and others are asking themselves, “How did these tech pioneers build these stellar experiences with such lean teams? What sort of voodoo were they using?”

MICROLAND®

The secret is right there in the open. But still out of reach for many enterprises

As these enterprises seek to figure out how they can deliver like a Google or LinkedIn, they have realized that successful start-ups have actually been Open Sourcing and Open Sharing their secrets for a while. So, the Voodoo is out in the open and available to all. Enterprises merely have to containerize, move to cloud-native models and embrace SRE. Easy, right? But there's a big huge rub: Legacy IT systems and applications, compliance and processes stand in the way. The so-called "voodoo" does work like magic when you're starting from a blank slate. But the challenges are significant and expensive if you have years and even decades of old habits to undo.

MICROLAND®

Behold, “MinimalOps”:
the work-around for enterprises:

Microland’s promise to our clients is a different way forward. By rethinking infrastructure to be software defined and then automating its operations and management, we can transform and run their IT infrastructure ensuring their Digital Experience never flags. Period.

We call IT operations that run this way “MinimalOps” – a stage before the dream space of “NoOps”.

MICROLAND®

Defining and measuring success:

A MinimalOps approach can only be deemed successful if it delivers for the consumer (employees fit this description too, especially millennials)

The desired experience is:

- Always available (no downtimes, planned or otherwise)
- Consistent performance – irrespective of scale, time of day or load
- Secure, yet easy to use
- Fresh, constantly updated
- Commodity priced

We can't be successful, on our clients' behalf, unless we transform the traditional IT infrastructure to be characterized by

- Zero service downtime – planned or otherwise
- Error-free, responsive performance under any load
- Secure, compliant and consistent
- Low cost of ownership that grows more efficient with more users

MICROLAND®

Managing the line between building and transforming the infrastructure.

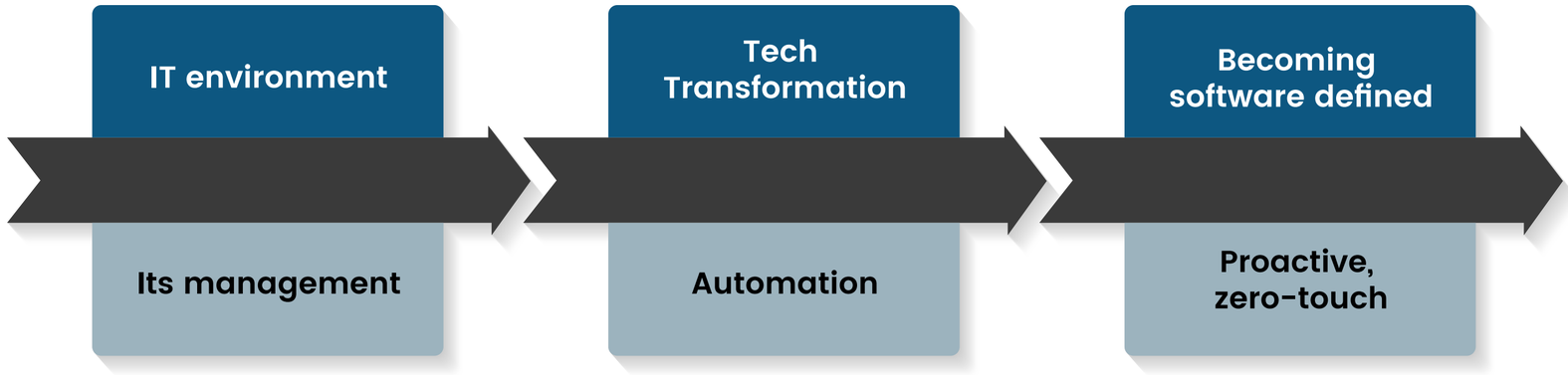
At Microland, we focus a lot of our innovation efforts on the boundary between building or transforming infrastructure and running it.

Above the line: transform the infrastructure

- Containerization
- Software-defined computing, networks and storage
- Reactive architectures

Below the line:

- Clickstreams and telemetry instead of simple monitoring
- Proactive resolution models
- Auto-scale
- CI/CD implementations
- Rolling updates
- Rule of 5 (Automate any task repeated more than 5 times)

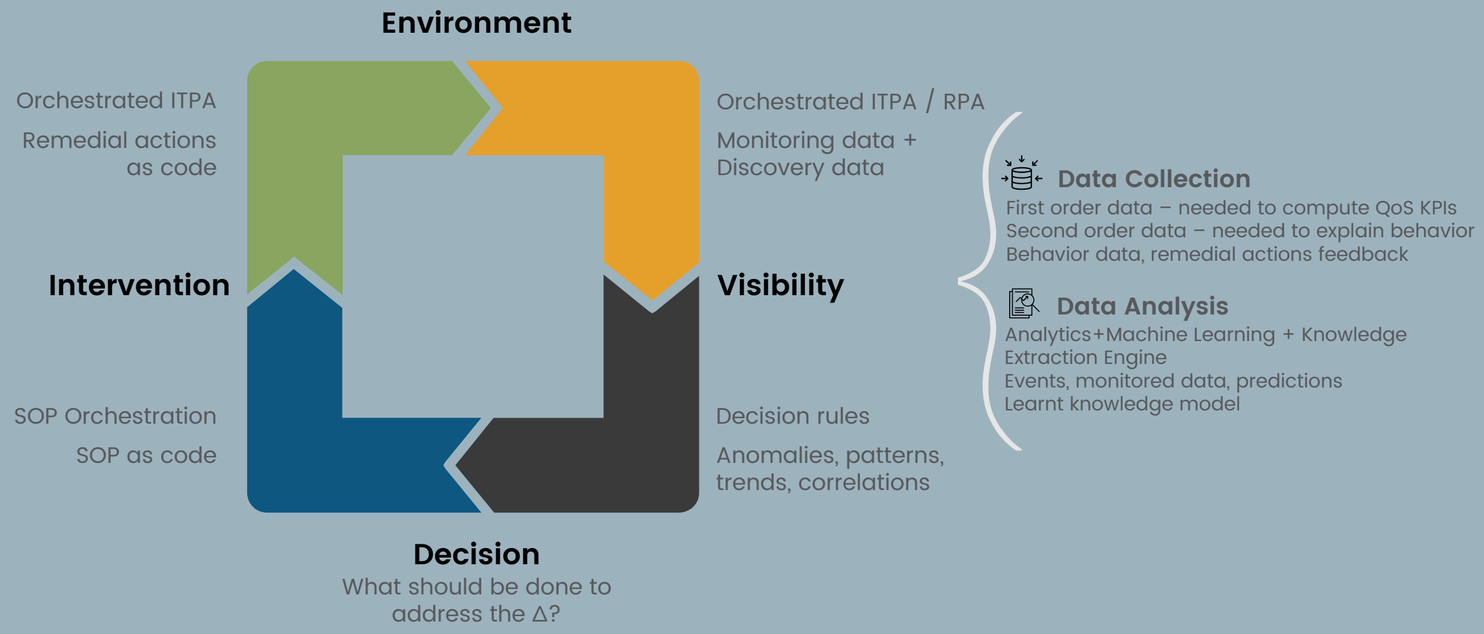


Needless to say, the transformations above the line and the transformations below the line go hand-in-hand. Applications are containerized and a CI/CD model enables rolling updates with no service downtime, adaptive scaling of compute or network bandwidth is algorithmic, driven by behavior inferences drawn from telemetry data.

MICROLAND®

Data-driven, algorithmic management and operations

Just as infrastructure becomes software-defined, its management and operations also become software-defined – in fact algorithmic and data-driven. Measurable Quality of Service (QoS) KPIs are at the heart of this with a concrete focus on Availability, Reliability, Performance and Security. We work with the client to define the optimal QoS level and then evaluate all activities in terms of impact on QoS. If there is an impact, remedial action is taken to balance this out. This monitor-deduce impact-decide action-act cycle, implemented in software is how IT operations runs.



Learning, adaptive infrastructure sustains QoS

The end goal is a highly automated environment analogous to a self-driving car. The quality of service delivered by the Environment remains stable by detecting disruptions and remedying them in as short a time as possible, preferably proactively. Machine Learning is an essential part of this model – not just to detect patterns of behavior but to also understand environments as they continually evolve.

MICROLAND®

From MinimalOps to NoOps

Inside the Innovation Kitchen at Microland, we're already visioneering what it would take to achieve an end state where autonomous systems learn environments and their management - this is perhaps the dream of NoOps.

The journey from traditional IT to these automated environments is a sequence of transitions as illustrated in the table beside.

We design and implement architectures that enable this journey.

	Manual Ops	Automated for efficiency	AIOps-proactive models	Nearing NoOps
Focus	Streamlining and standardization of service management	Automate any repetitive manual tasks, optimize headcount	Improve QoS, reduce jitter, eliminate manual triggers	Data-driven self regulated models
Observables	Streamlining and standardization of service management, SOPs, tech team led automation, individual scripts	Orchestration engines, linking alerts to automated scripts	AIOps tools connecting monitoring to orchestration/tickets, library of automated scripts	AIOps tools, knowledge graph and auto-resolvers working in tandem. Significant infrastructure abstraction
Difference made to managed services	More efficient managed services, better MTTR, <5% automated work	Reduction of manual effort and reduce error 15-30% automated work	Proactive Qos management, >50% automated work	Hyper scale, Google like SRO, almost all tasks automated
Monitoring, visibility, data-driven, automated response sophistication	Standard monitoring for A, S, Limited for R, P. Pre-defined thresholds No automation data store Standalone, manually triggered scripts	Alert pattern definitions to link to scripted responses and automation. CMDB driven orchestration.	Monitoring across multiple sources, alert generation using ML models, automation uses its own DB for orchestration, auto-triggered automation actions	Monitoring covers all RASP, knowledge base automatically updated with patterns and relations, rapid deployment of automated actions.

MICROLAND®

Satish Sukumar
Chief Automation Officer

As Chief Automation Officer, Satish Sukumar spearheads initiatives in analytics, machine learning, and artificial intelligence to drive superior business outcomes for our clients.

To this end, Satish's core responsibilities at Microland include accelerating the adoption of embedded automation and enabling clients to leverage actionable insights with Microland's automation solutions and platforms.

Satish is a seasoned industry veteran with over 23 years of experience as a software architect. He is currently laser-focused on technologies, architectures, and engineering disciplines core to Digital Transformation.

Microland's delivery of digital is all about making technology do more and intrude less. As we help enterprises move to nextGen technologies, we make sure this embrace of brilliance is predictable, reliable and stable.

Incorporated in 1989 and headquartered in Bengaluru, India, Microland comprises more than 4,500 digital specialists across offices and delivery centers in Asia, Australia, Europe, Middle East and North America.

For more information visit www.microland.com or email us at info@microland.com

MICROLAND®

Making digital happen