Infrastructure & Operations Priorities 2022

BENEFIT REALIZATION, RESOURCE, AND RISK OPTIMIZATION FOR I&O LEADERS

INFO~TECH RESEARCH GROUP

Info-Tech Research Group Inc. is a global leader in providing IT research and advice. Info-Tech's products and services combine actionable insight and relevant advice with ready-to-use tools and templates that cover the full spectrum of IT concerns.

Michael Best

Prioritization in the face of unrelenting change

"I HAVE ALWAYS FOUND THAT PLANS ARE USELESS, BUT PLANNING IS INDISPENSABLE"

This WWII era quote from Dwight D. Eisenhower sums up the sentiment of the many IT professionals we interviewed while building this report. These past two years have been a time of significant and largely unforeseeable events, which has made responsible planning … challenging. This does not however give an I&O professional the license to fly by the seat of their pants.

Planning becoming harder compels us to more closely examine our actions, to contextualize trends, and to evaluate the specificity of each to our unique business and operations. Today more than ever, we are aware that come tomorrow we will not have been able to accomplish all the things we had set out to do.

Rigorous prioritization is required to ensure we do **the right things** – not the easy things, not the common things, but the things that will make the greatest impact on the bottom line. That is our responsibility as I&O professionals; that is our accountability to our stakeholders.

30% more professionals expect transformative, permanent change compared to one year ago.

47% of professionals expect a lot of permanent change; this remains the same as last year.

Info-Tech Tech Trends 2022 Survey

Introduction

WELCOME TO THE INFO-TECH 2022 I&O PRIORITIES REPORT!

We have spent the last three months gathering signals from key vendors, standards bodies, industry organizations, notable tech influencers, reputable media, Info-Tech analysts, counselors, researchers, and of course – you, our members. We have done our best to separate the signal from the noise, conduct our analysis in a defensible framework, and finally, present this all to you in an enjoyable and consumable format. By reading through this publication, you will begin to address the age-old problem of "not knowing what you don't know."

More importantly, we have a challenge for you: **Don't take our word for it!** Don't let Info-Tech – or anyone – dictate your priorities for 2022. Instead, use the framework we've provided to dive deeper into the trends most relevant to you and your organization. Document the priority (one, maybe two) you care about most in our template and present your analysis to stakeholders. We have taken great care to ensure everything we present in this report is not wrong – only you can turn not wrong into specifically true.

Partner with Info-Tech Research Group to help refine the message of what **YOUR** I&O organization needs to be focusing on in 2022!

Value

HOW TO COMPARE APPLES AND ORANGES

Prioritization is less about determining what is at the top and more about agreeing where to draw the line – below which you can ignore things with a clean conscience. Clear and, most importantly, shared definitions of value are vital when attempting to draw that line. How else do people agree on what really matters?

If something is important enough, it will be tracked. If something is tracked, then it must be measured. If something is measured, then there must be an agreed upon metric. What matters is measured, what is measured is metriked, what is metriked is tracked. Your priorities need to track what's important or else they won't matter at all!

The following is a sample of the key performance metrics the Info-Tech *2022 I&O Priorities Report* can help you improve.

> **"Price is what you pay; value is what you get"**
>
> WARREN BUFFETT VIA BENJAMIN GRAHAM

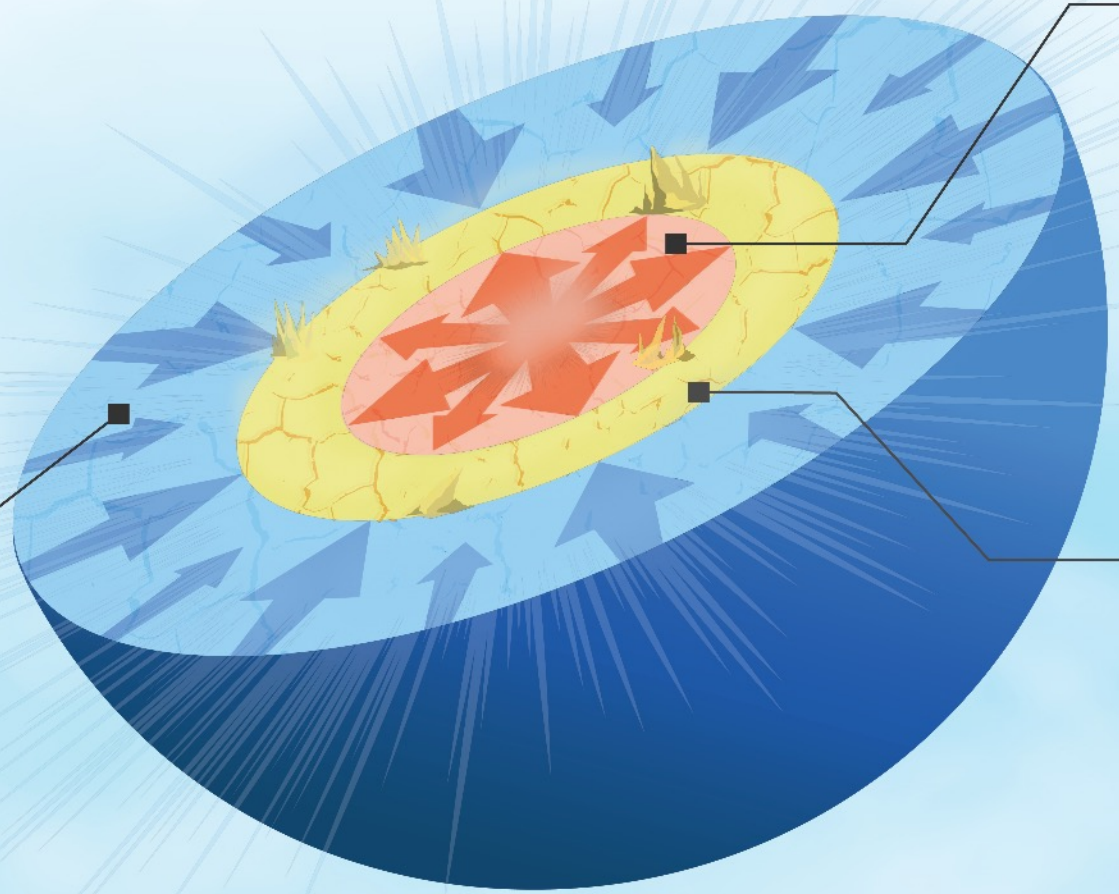
# of Data Loss Incidents	**Lost Time (Meetings)**	**Mean Time to Repair**	**# of Ticket Escalations**	**% Time for Projects**	**IT Employee Engagement**
Service Desk Satisfaction	**Employee Engagement**	**# of Service Desk Tickets**	**Infrastructure Compliance**	**Mean Time to Provision**	**# of Unique Platforms**
Rate of Staff Collaboration	**First Call Resolution Rate**	**Ticket Reopen Rate**	**Mean Time to Patch**	**Infrastructure Utilization**	**TCO**

Infrastructure & Operations Priorities 2022

INFO-TECH RESEARCH GROUP

The geode shows us that, when applied correctly, pressure can create something beautiful and durable. Priorities are the crystal-like results of pressure put on a system of finite means – a system like an I&O practice.

Internal and external pressures compel leaders to make hard choices. Once such a choice is made, it acts as a safety valve, allowing the system to vent excess pressure and focus on executing the newly formed priority. Understanding your I&O practice's internal and external pressures will help you select the priorities that will be most effective.



Internal Pressures

- **Business Demands**
  Optimization really means that your I&O practice is perfectly attuned to the business needs of yesterday. New leadership at the top, new markets, new products, and new political, financial, and organizational realities all demand change from the machine you finally just got tuned and running well.
- **Service Design**
  The only constant in I&O is constant change. Skills development, staff retention and recruitment, and organizational design have a historical inertia but also are the quickest roads to competitive advantage for an I&O leader to exploit.

External Pressures

- **Standards & Practices**
  There is no shortage of neutral and not-so-neutral bodies who have an opinion on how I&O work should be done. What do the latest CIS, ITIL, ISACA, ISO, and many other updates mean to your day-to-day operations and RACI charts?
- **Technology Acquisition**
  The "New" is constantly competing with the "End-of-Life" when it comes to priorities. One half of I&O is infrastructure, which means technology, which means dealing with vendors and their roadmaps. Where should I&O leaders invest?

Infrastructure & Operations Priorities Formed

- Hybrid Work: Technologies & Best Practices
- Artificial intelligence for IT operations (AIOps)
- Employee Experience Management
- Microsoft Desktop Experience

Michael Best

#ITRG

Priorities Framework

INTERNAL PRESSURES

Business Demands

Service Design

Infra & Ops practices are by charter and creed in the service of some grander design and must therefore deal with the pressure resulting from business leadership changing that design. Similarly, a self-made pressure exists from historic decisions I&O has made around the services they offer as well as the planning and organization therein.

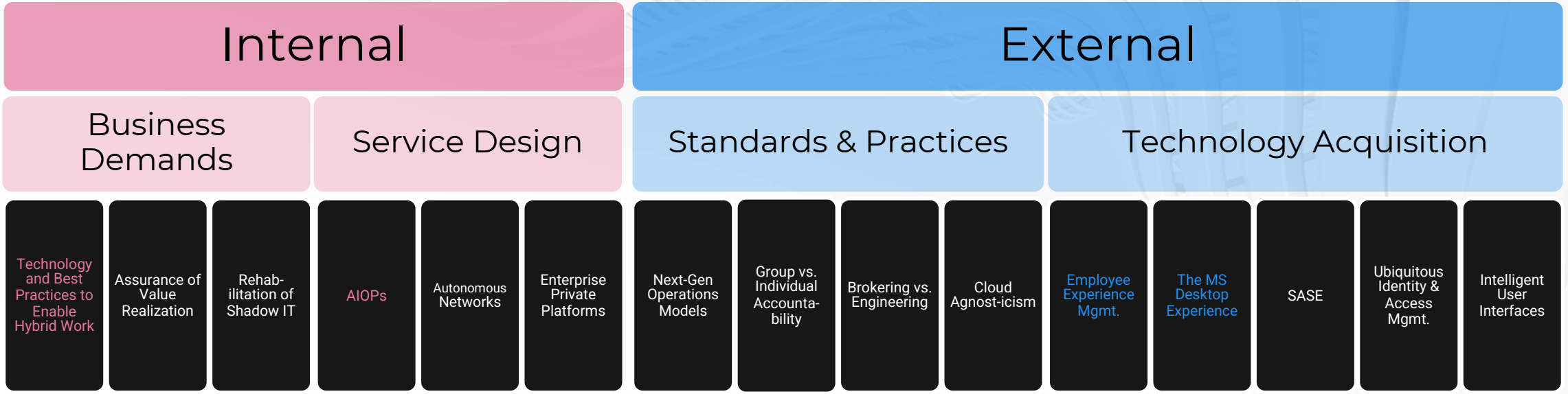
EXTERNAL PRESSURES

Standards & Practices

Technology Acquisition

IT as an industry is practically defined by a host of neutral bodies that claim to offer agnostic, yet constantly evolving, practices and standards. Risk-averse stakeholders everywhere use these to put pressure on I&O practices. Also, since the enterprise generally buys rather than builds the technologies they rely upon, market availability (or absence thereof) exerts considerable pressure.

I&O Priorities 2022



Priority Info-Tech will define the priority and attempt to identity specific actions available for you to take as a result.

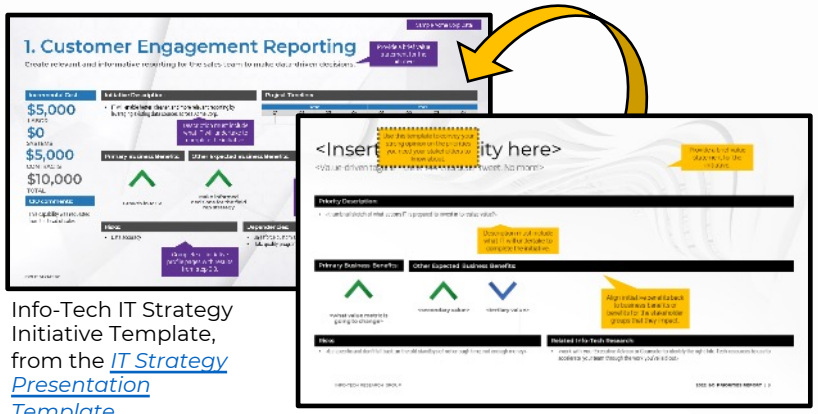
Priority Spotlight Info-Tech will conduct a deeper dive, exploring the context of this priority and evaluating the potential value it has for your organization, and we will share our opinion on how to move forward.

Challenge: Make these priorities your OWN

No one ever got fired for buying Big Blue … but that was 50 years ago. Today it is not enough to blindly do something simply because everyone else is doing it. That is the safe path to mediocrity. To be seen an innovator and not a firefighter, to be viewed as a strategic asset instead of a cost center, I&O professionals must demonstrate a nuanced understanding, personal ownership, and stake in the business they work for. Leaders are identified and evaluated based on the priorities they advocate for.

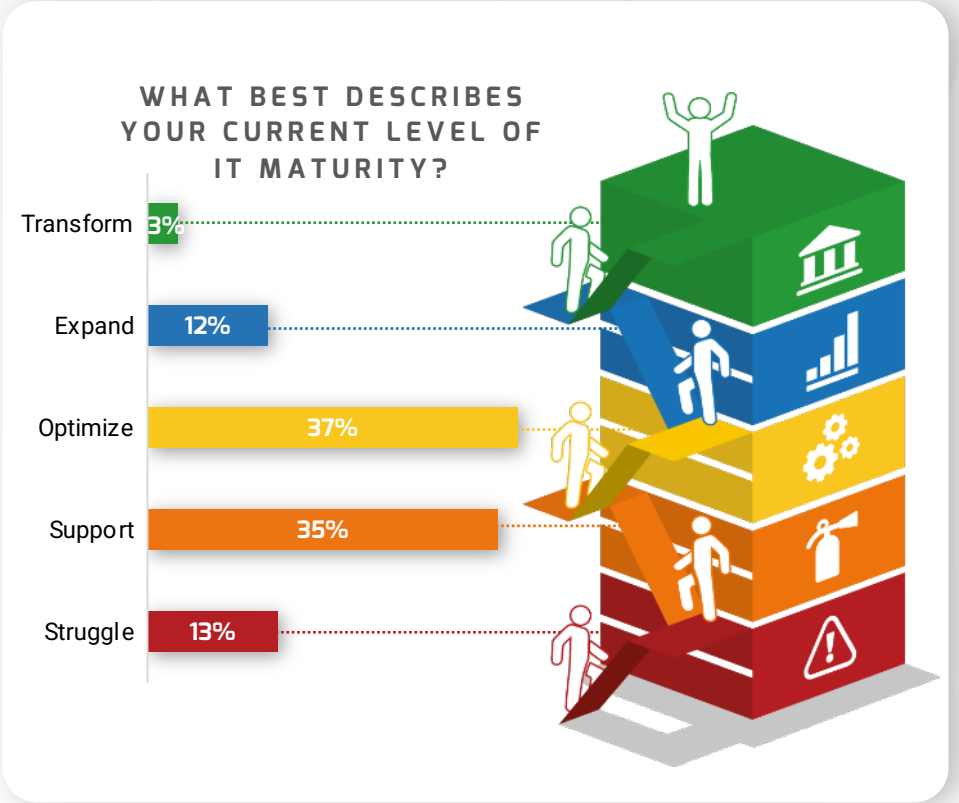
Info-Tech can help! Align your priorities with our material on *Building a Business-Aligned IT Strategy*. Use a modified version of the Strategy Initiative template (next slide) to convey **your strong opinion** on the priorities you need your stakeholders to know about. And do so in a way that is familiar so they will easily understand.

Call your Executive Advisor or Counselor to help identify the one or two key messages you want to bring forward for success in 2022!



Info-Tech IT Strategy Initiative Template, from the *IT Strategy Presentation Template*

Priorities Report Initiative Template



Info-Tech CIO Business Vision Diagnostic

<Inse[illegible]ority here>

<Value-driv[illegible]acter tweet. No more!>

Use this template to convey your strong opinion on the priorities you need your stakeholders to know about.

Provide a brief value statement for the initiative.

Priority Description:

- <thumbnail sketch of what actions IT is prepared to invest in to realize value>

Description must include what IT will undertake to complete the initiative.

Primary Business Benefits:

<what value metric is going to change>

Other Expected Business Benefits:

<secondary value>

<tertiary value>

Align initiative benefits back to business benefits or benefits for the stakeholder groups they impact.

Risks:

- <be specific and don't fall back on the old standbys of not enough time, not enough money>

Related Info-Tech Research:

- <work with your Executive Advisor or Counselor to identify the right Info-Tech resources to use to accelerate your team through the work you've laid out>

Technology Acquisition

EXTERNAL PRESSURES

Employee Experience Management

MS Windows Experience

SASE – Secure Access Service Edge

Ubiquitous Identity and Access Management

Intelligent User Interfaces

2022 I&O Priorities

EMPLOYEE EXPERIENCE MANAGEMENT

Software that aggregates a collection of signals and other telemetry to model the employee's real-time experience using the IT systems required to accomplish their job.

A distributed workforce coupled with business apps hosted in a variety of public cloud providers means understanding the root cause of the service desk ticket "my computer is slow" is harder than ever. Agent-based or agentless, this technology is a tool to help safeguard employee productivity from infrastructure that is not living up to its performance SLA.

VENDORS – SOFTWAREREVIEWS CATEGORY COMING SOON!

Aternity

Catchpoint

ThousandEyes

SASE – SECURE ACCESS SERVICES EDGE

Latest productization from the general concept of software-defined networking. An evolution that transforms SD-WAN products into cloud-hosted services while layering on significant additional security controls.

SASE provides a control frame that extends to the edge of wherever users happened to be and into the previously unassailable black box of public SaaS (and some PaaS) offerings. A necessary component of most comprehensive zero-trust initiatives because the distributed nature of employees and the applications they consume make it very complicated and time consuming for I&O to build out all the necessary control planes.

VENDORS – SOFTWAREREVIEWS CATEGORY COMING SOON!

CATO Networks – SASE Cloud

Palo Alto – Prisma

Fortinet – FortiSASE

2022 I&O Priorities

UBIQUITOUS IDENTITY AND ACCESS MANAGEMENT

Identity is a foundational building block that enables applications and IT systems. In a zero-trust world it becomes the keystone. Silos are no longer an option and synchronization between LDAP, AWS, and on-prem AD has always been a pain. You need to be able to identify, profile, and validate the user where they are and at all points within the environment. Single sign-on has evolved into a consumable service, cloud hosted and managed. Just beware – the stickiest thing a vendor can use to hold you to them is your identity and access management system. If you need a place to start, Info-Tech can help with our *Assess and Govern Identity Security* blueprint.

INTELLIGENT USER INTERFACES

Clippy may be long dead, but the idea of an enterprise virtual assistant is alive and well. Most successful implementations are tightly integrated with another vendor's product – chatbots for ITSM platforms like ServiceNow, for example. Products are coming on the market, however, that I&O can customize and share across the enterprise, enabling citizen developers to build workflows and automations. Microsoft retiring Cortana from the Windows product line and placing it within the MS Teams umbrella tells us there will be an upcoming push for this sort of business-led automation and interface.

VENDORS – SOFTWAREREVIEWS CATEGORY – LINK

Microsoft Azure Active Directory

Okta Workforce Identity

Auth0 Universal Login

VENDORS – SOFTWAREREVIEWS CATEGORY COMING SOON!

Google Natural Language AI

Amazon Comprehend

Microsoft Cortana in Teams

2022 I&O Priorities

WINDOWS DESKTOP EXPERIENCE

The desktop is an increasingly quaint and inaccurate analogue for a tool that is supposed to enable workers in a knowledge economy. It is a vestige of the operating system wars of the ’90s that pitted hyper-multiplexing against true multitasking, user control and customizability against system stability, and resource efficiency over usability. The time has come that this may now all be redundant. In a world where data is almost never saved locally, where applications are delivered via a user’s browser of choice, and where security exists by design, what is the place of Windows, Chrome, or Spaces within the realm of an I&O practice?

VENDORS – SOFTWAREREVIEWS CATEGORY

Desktop-as-a-Service

Employee Experience Management

Employee experience monitoring (sometimes called digital experience monitoring) should not, under any circumstances, be confused with employee productivity monitoring. One is a means for Infrastructure and Operations to help and assist employees, to ensure they each have the individual digital context required to be as productive as possible in their jobs. The other is a surveillance-state-adjacent means for management and HR to try and solve people and process problems with technology.

CONTEXT

Employee experience management is akin to customer experience management, a term that web developers and programmers tossed around a lot back in the mid-2000s. They realized there was an inverse correlation between laggy, non-intuitive, or otherwise difficult interfaces and the amount of revenue one could realize. Consumers bought more from responsive, easy-to-use websites and outright boycotted those that weren't. Nearly 20 years later, circumstances have now similarly forced us to consider the direct correlation between the quality of an employee's digital workspace and their productivity.

Employee Experience Management

The day-to-day work an employee is now expected to accomplish spans multiple applications, many of which are now shared services hosted in a public cloud. This employee no longer has a dedicated gigabit to their endpoint. Instead, they must rely on a mishmash of consumer broadband, DSL, or LTE while in direct competition with the typical non-enterprise internet traffic of the average family household. If employees are **the** competitive edge and key differentiator for a business, I&O has a duty of care to ensure that the employee's digital experience enables and does not retard the value of that asset.

THE PROMISE

Deliver sufficient telemetry so that when a remote (or local) user complains about Application X being slow, IT can effectively diagnose the problem. Vendors are clamoring to monetize – offering monitoring and control tools (both agent and agentless) that allow service desk staff unprecedented visibility into the actual minute-by-minute circumstances that make up a knowledge worker's day. Is the root cause of incident with the personal endpoint they are using? Is the home network being disrupted by a frozen pizza snack being heated in the microwave? Is the cloud service down or is the problem just in that employee's specific region? Individual and per application baselines, synthetic testing, and point-in-time comparisons are new capabilities to help I&O ensure that employees can be as productive as possible.

Employee Experience Management

THE VALUE – RISK OPTIMIZATION

Minimal – No strongly relevant KPI

More visibility always comes with the opportunity to spot untoward activity. An agent on every endpoint certainly lets you accumulate more data; however, it's important to remember the signal-to-noise ratio. There is a plethora of other monitoring systems purpose-built or tuned for security purposes. Another general-purpose monitor will be of minimal or potentially even negative value.

THE VALUE – BENEFITS REALIZATION

Potential – Increase employee engagement scores

Direct – Increase service desk satisfaction scores

Digital workspaces are on the rise, and this is the complementary technology to independently verify the performance characteristics of those environments. As work-from-anywhere transitions from fashionable job perk to necessary condition for employment, the quality of that environment becomes a factor for talent acquisition and retention. Exceptional technology has a weak correlation to employee engagement, but substandard technology has an exceptionally negative correlation. Experience management alone is not sufficient but does provide visibility to potentially sub-standard technology systems, hopefully before employee engagement is affected.

Employee Experience Management

THE VALUE – RESOURCE OPTIMIZATION

Potential – Reduce number of service desk tickets

Potential – Reduce mean time to resolve service desk tickets

Direct – Increase first call resolution rate

Direct – Decrease ticket reopen rate

Employees who struggle with their IT systems accomplish less work. Service desk technicians who guess blindly about the root cause of incidents take longer to resolve those incidents. Employee experience management (EEM) software has the potential to resolve infrastructure performance issues before they impact employee productivity, and once an issue has occurred, it drastically reduces the time a technician requires to diagnose and begin resolving the issue.

THE ACTION

Start immediately dispelling the notion that employee experience monitoring is for Big Brother and micromanagement. EEM is a tool that assists I&O in helping employees when they ask for assistance.

Once you have the people and culture bought in, you can move on to processes and tool selection.

Windows Desktop Experience

Windows Desktop. The literal meaning of those words gives us insight as to why this space is being so disrupted right now. Microsoft's enduring concept of the digital working place was introduced to the enterprise in the '90s (technically Win 1.0 was 1985 but with exceptionally limited adoption). A digital Window into your virtual Desktop. A recreation of the real-world environment in this new medium. Thirty years later, the real world of 2022 scarcely resembles the one of 1992. The tight coupling of a personalized, customized operating system to a specifically located device and employee doesn't match the current work-from-anywhere, from-any-device world. Microsoft is offering a host of options in the hopes that most I&O practices will choose to remain customers rather than attempt to keep up with the digital Joneses by switching horses.

Windows Desktop Experience

WINDOWS 11

The latest release from Redmond from its most successful product line, Windows 11 is a competent if uninspiring successor to Windows 10. Some cosmetic changes (a not-so-subtle nod to Mac), enhanced integration with MS Teams, and better support for multi-monitor docking and undocking is not enough for the Enterprise to beat a path to its door. Enhanced security, TPM chip requirements, and MS Hello are more compelling, but MS is not forcing anyone to upgrade to Windows 11. Those enterprises that opt in will have more of a seasonal update experience than the historic upgrade – one of disruption and sadness.

AZURE DESKTOPS/DESKTOP-AS-A-SERVICE

At long last Redmond has finally taken a foray into offering its own consumption-based virtual desktop platform. Not to be confused with the Microsoft 365 SaaS product offering, Azure Desktops is more akin to a Citrix or VMware product (both of which Azure Desktops integrates with to bridge capability gaps). Being hosted within the Enterprise tenant gives it direct access to other Ent. Azure workloads. This is especially important for client-server apps that may have been rapidly rehosted and not optimized for WAN connectivity. More interesting is that AVD comes with **NO additional license costs,** assuming you have eligible M365 or Windows per-user licenses in place. All you pay for is the vCPU, storage, and networking allocated to those desktop VMs, the rest of the evolved RDS tools are yours for “free”!

Windows Desktop Experience

MICROSOFT 365

When simplicity is the name of the game (and the unspoken assumption is that 100% of the enterprise's app portfolio is compatible) then Microsoft 365 offers a one-stop subscription for your unstructured work needs. Productivity applications, email, meetings and voice collaboration, and workflow management wrapped up with identity and access management, information and threat protection, compliance reporting, and the tools and analytics to manage the device you put it on. All for one no-so-low-but-not-outrageous price of US$57 per month per user.

DEVICE-AS-A-SERVICE

Not strictly a Microsoft offering (although it did pioneer the model, bundling MS Surfaces, service contracts, and additional software into a lease vehicle through its partner network back in 2016), this other DaaS acronym (not to be confused with VDI DaaS) is an outsourcing model where a traditional PC/endpoint vendor supplies the device but also deployment, patching, maintenance, and basic Tier One support services, plus break fix and limited COTS application end-user support. The promise being faster response times when "escalated to vendor" as well as freeing up local IT resources to do more enterprise-specific and valuable work.

Windows Desktop Experience

THE ACTION

At the end of the day, I&O has an obligation to put something in the hands of employees that enables them to accomplish the work expected of them in the manner and location proscribed by the business. A balance must be struck between suitability, management, and support obligations as well as risk and compliance when charting a path forward.

It all starts with the applications – start evaluating those enterprise apps today to understand what desktop experience or equivalent you will need to provide, and what support you will be expected to give, tomorrow.

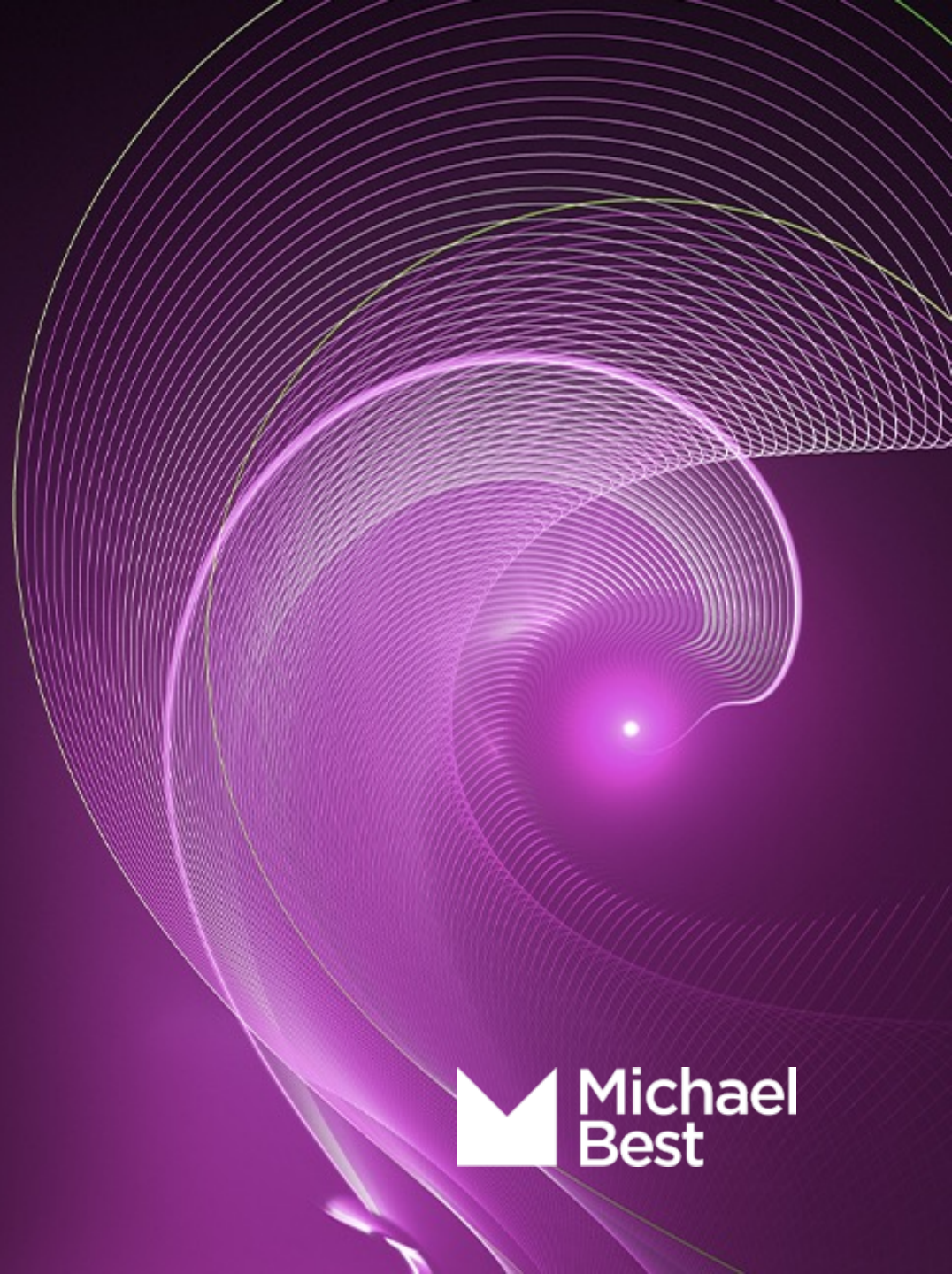
Business Demands

INTERNAL PRESSURES

Best Technology and Practices to Enable Hybrid Work

Assurance of Value Realization

Rehabilitation of Shadow IT



INFO~TECH
RESEARCH GROUP

Michael Best

2022 I&O Priorities

TECHNOLOGY AND PRACTICES TO ENABLE HYBRID WORK

The business is looking to Infrastructure & Operations not only to deploy and support new remote/hybrid work technologies but to teach, coach, and support users on the tools and best practices required to run effective multi-modal meetings, create workflows, and coordinate asynchronous effort. The technology experience is expected to be as seamless and intuitive as the operational support is prompt and comprehensive.

ASSURANCE OF VALUE REALIZATION

The business needs more than just a promise of value – it needs a report on outcomes and specific realizations of value for all IT activities, including those outsourced to others. This is not just a matter of profit maximization either. Increasing regulatory complexity from GDPR, the California Privacy Law, and Canada's Bill 64 is pressing the case for a deterministic model of IT operations. Infrastructure must establish sufficient visibility into its systems so that Operations can react before value is lost or negative outcomes occur.

REHABILITATION OF SHADOW IT

The business is increasingly comfortable expressing intent in an opinionated technical manner rather than needing an IT layer to handle interpretation. And if slow, action quickly follows intent. The technology that an I&O team deploys must be self-service consumable, and the operational processes I&O puts in place must support, account for, and protect from harm users who lack expected traditional domain expertise.

Technology and Practices to Enable Hybrid Work

Hybrid work is a reality for all organizations post pandemic. Technology **and skills** are needed to ensure ongoing productivity of collaborative activities. Even pre-pandemic the productivity of collaborative activities was not guaranteed. Face-to-face work masked systemic inefficiencies in preparatory, facilitation, and follow-up activities. The rapid expansion of technology solutions only served to highlight the human problems of usage and adoption. Clear intentionality and trained disciplined facilitation is required to ensure collaborative outcomes and productivity. I&O can provide the tools and training, but these new norms must be accepted across the entire working culture – shared, sanctioned, and integrated with the business practices.

THE CONTEXT

Not since the days of Mail Merge (or possibly PivotTables) have general end users looked so keenly at I&O to help them with the day-to-day aspects of their job. New technologies in the new normal marketplace are not always recognizable as analogues for traditional modalities of how people organized and worked. Angst inducing as it may be, this is in fact a good thing. A great thing! Technology should enable work as it needs to happen rather than force an approximation. People and processes will make technology adapt – they always have.

Technology and Practices to Enable Hybrid Work

Consider electronic mail: despite its technical origin as a file dropped into the root folder of a user, it was introduced to the public as being like a letter sent by a computer. But creating letter mail was a long-form, formal writing activity where the author would take measurable time to find the most effective way to express their thoughts, which were organized into well-constructed sentences and paragraphs. The recipient would read the mail within days and respond within a week. Contrast that to the modern email – a slapdash, unfiltered discharge of half-formed thoughts, a greeting and FYI atonality with more emojis and initialisms than actual text that demands a response within a half hour or sooner, lest the author resend and carbon copy your manager. It took 25 years for the user to learn to use, understand, subvert, and then repurpose a technology to make it their own. In the new normal of hybrid and remote work, we just don't have that kind of time.

THE PROMISE

Asynchronous collaboration, follow-the-sun workflows, meetings employees want to attend and participate in, broadcast-quality production value, work accomplished during the session rather than takeaways, inclusion over exclusion of employees – hybrid work technologies promise to provide a plethora of new formats that will fulfill the purpose of, yet achieve better outcomes than, what had historically always just been scheduled as a meeting.

Technology and Practices to Enable Hybrid Work

THE VALUE – RISK OPTIMIZATION

Direct – Decrease number of data loss incidents

Capabilities are neither inherently good nor bad, but new capabilities can easily be misused to inadvertently enable bad results. Training reduces the likelihood of unintended negative outcomes, and technology allows a way to measure and track data as it is shared.

THE VALUE – BENEFITS REALIZATION

Significant – Increase number of collaborators

Significant – Increase service desk satisfaction scores

Significant – Increase infrastructure/platform utilization

All things being equal, workers tend to default to what they already know. Awareness, training, and assistance with these new technologies are vital elements to drive end-user adoption. Empathic and consistent support from the service desk yields 1.54 times the end-user satisfaction than even the fanciest virtual presence devices.

Technology and Practices to Enable Hybrid Work

THE VALUE – RESOURCE OPTIMIZATION

Direct – Reduce meeting time delays

Direct – Reduction in calls to service desk

Direct – Rationalization of overlapping platforms

Anyone who has been in a room waiting for a fisheye boardroom table camera to stop pointing at the ceiling has done the back-of-the-napkin math about how much time and salary dollars technology delays have cost the company. Or the colleague who is talking about the quarterly results while presenting the desktop background image of their family vacation. Training helps ensure the meeting organizer can deliver an effective and seamless experience for their participants and that one-hour meetings will have closer to 55 minutes of productivity than 15.

THE ACTION

Before spending the money on a Metaverse address and Oculus goggles for all employees, understand, experiment, and discuss with the business what works for them. Work should shape the technology, not the other way around. Research such as Info-Tech's *Rationalize Your Collaboration Tools* blueprint can help you tease out the collaboration your users want and need most. Once the capabilities are understood, then you can move to service planning and technology acquisition.

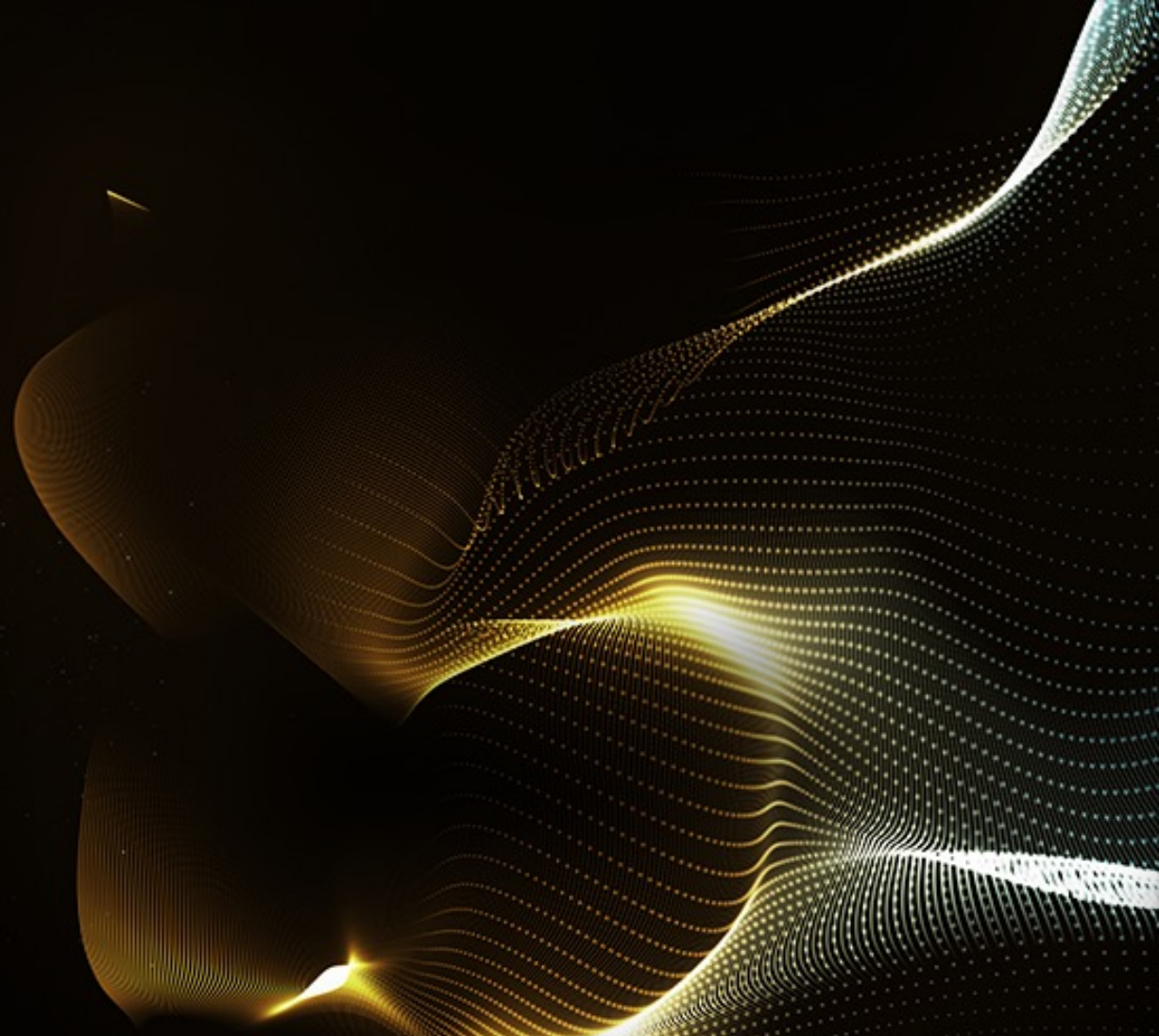
Service Offerings

INTERNAL PRESSURES

Artificial Intelligence Operations (AIOPs)

Autonomous Networks

Enterprise Application Platforms



INFO~TECH RESEARCH GROUP

Michael Best

2022 I&O Priorities

ARTIFICIAL INTELLIGENCE OPERATIONS (AIOPS)

Operations has historically been a discipline chiefly focused on describing the work of humans toward a common purpose or specified outcome. No more. A rapidly expanding creep of systems, talent constraints, increasing complexity, interoperability, and tightening tolerances are all contributing to the replacement of human toil by machine toil. Automation allows human operators to work faster, and AIOps turns human operators into supervisors. Humans and AI technology work better together than individually in isolation. While vendors sell AIOps platforms as a product, note that success only comes for those I&O organizations willing to do the hard work of tightly defining process, clarifying intent, and evolving their skill set.

VENDORS – SOFTWAREREVIEWS CATEGORY – LINK

Micro Focus Operations Bridge

DRYiCE IntelliOps

Splunk IT Service Intelligence

2022 I&O Priorities

AUTONOMOUS NETWORKS

Autonomous, self-healing, intelligent, self-driving, intent-based – all truisms of IT. You can tell the maturity of a technology based on the number of vendors that are using proprietary terms to define a market space. Regardless of trade name, there are three primary components: business intent, service intent, and resource intent. Each is a complete and closed control loop that expresses and then affirms an expected outcome. The expression and affirmation loop allows intent to flow across all three layers. True interoperability may yet be a long way off, but agnostic reference architectures have been published (May 2021) and vendors are shipping products.

ENTERPRISE APPLICATION PLATFORMS

As the line between what is Ops and what is Dev continues to break down, the wise I&O leader is looking for a service or product framework to keep pace. Vendors can't help but try to sell tools that inflict their own opinions. Optimistically, this is a chance to accelerate development and deployment, deal with unprecedented rates of change, and forestall the knowledge lost when employees walk out the door. Practically, it takes more than a tool to accomplish these things and I&O should have been negotiating with Dev last year.

VENDORS – SOFTWAREREVIEWS CATEGORY COMING SOON!

Huawei – Autonomous Driving Network

IP Fabric – Automated Network Assurance

Cisco – Intent-Based Networking (IBN)

VENDORS – SOFTWAREREVIEWS CATEGORY COMING SOON!

VMware – Tanzu

ServiceNow – Now Platform

RedHat – OpenShift

Artificial Intelligence Operations (AIOps)

What isn't AIOPs these days? Much like its predecessor panacea "cloud," AI is being appended to so many vendor products right now that it seems to have lost any useful meaning. Every marketing and PR firm is convinced the fast track to brand awareness and massive profits involves shoehorning those two letters into a product name. Every virtual keynote speaker is trying to cement their next appearance fee with ever more grandiose promises of a better future through probabilistic mathematics. Every CEO (at least 85% of them anyways) seems convinced that this is THE technology (blockchain being so 2018) that will finally kick their digital transformation process from plodding evolution into an energetic one. Woe betides the practical and tactical IT leader who does not share this unbridled optimism!

THE CONTEXT

Faced with all this external and internal pressure, what is our poor beleaguered Infrastructure Director to do? They have their own problems to contend with: IT systems are much more complex than they were five years ago and span multiple public and private cloud systems. Staffing and skill shortages are causing delays with even routine requests, and break/fix times continue to skyrocket.

Artificial Intelligence Operations (AIOps)

Operations' entire world is dealing with changing COVID-19 demands, end-to-end stack accountability, employee-centric collaboration, and providing a secure workspace regardless of workplace. Traditionally these were the professionals the enterprise turned to for protection against expensive technological fads. Now they have as much or more desire as any CxO to bang the drum and believe.

Ten years ago, this sort of naïve optimism would have been career limiting – remember the vendor promise of a single pane of glass? How much more unlikely was that promise when you expanded to a heterogenous environment? Today there may be a chance. Technology has matured and standardized. Product interoperability (even inter-vendor) is no longer an afterthought. The clear advantages and market adoption of public cloud platforms have driven these changes in behavior.

THE PROMISE

Observability and traceability across multiple applications that make up a business process. Command and control configurability across the same. Intention-based directives (stated in relatively plain English) that remain consistent as they are passed across the stack and that remain explainable by providing a feedback loop that helps clarify intention. New capabilities for I&O leaders to deal with staff resourcing and burnout in an exponentially increasing, complex environment.

Artificial Intelligence Operations (AIOps)

THE VALUE – RISK OPTIMIZATION

Direct – Decrease in configuration drift

Direct – Reduction in mean time to patch

Complexity frequently comes with increased compliance costs or reduced security scores. Continual awareness of infrastructure elements and consistent application of patches will materially improve the risk exposure of an I&O practice.

THE VALUE – BENEFITS REALIZATION

Minimal – Decrease mean time to provision

Direct – Technician-employee engagement

New services can be instantiated faster as the associated operational activities now scale based on technology rather than human resources. Waiting for Operations to complete configuration before a product can go live will be a thing of the past, but ONLY once those steps (and the associated resources) have been sufficiently standardized and documented. Despite any potential identity crisis, no one enjoys toil. Professionals do not get job satisfaction from that 18th straight hour of config change, each with the risk of a fat finger command line mistake taking down the backbone.

Artificial Intelligence Operations (AIOps)

THE VALUE – RESOURCE OPTIMIZATION

Direct – Increase % of technician time spent on projects

Direct – Decrease infrastructure overprovisioning

Potential – Decrease TCO

A significant percentage of incidents (85% from one vendor's data) being resolved without direct human intervention allows greater time for valuable and interesting work. Constant monitoring of infrastructure assets identifies consistent underutilization but also supports the development of predictable usage modeling. These in turn help optimize procurement to help reduce costs.

THE ACTION

Do not overreach – do not boil the ocean. Make it easy for leadership to see the outcomes they genuinely care about. Focus on key IT processes that are suitable for AI-enhanced automation to achieve measurable benefits – processes that are consistent, repeatable, and executed often. If you need help identifying suitable candidates, check out the Info-Tech blueprint *Accelerate Your Automation Processes*. Paradoxically, keeping the scope of the initial AIOps implementation modest often maximizes the result.

Standards and Practices

EXTERNAL PRESSURES

Next-Generation Operations Model

Brokering vs. Engineering

Cloud Agnosticism

Group vs. Individual Accountability

INFO~TECH
RESEARCH GROUP

Michael Best

2022 I&O Priorities

NEXT-GENERATION OPERATIONS MODEL

Applications are conceptualized, instantiated, operated, and retired very differently now. Traditional IT Service Operations has splintered under the weight of complexity and specialization: Network Ops, Cloud Ops, DevOps, SecOps, SRE, and DevSecOps. Infrastructure and Operations must bring together all the stakeholders to establish a framework that supports the entirety of the enterprise application portfolio and its lifecycle, using the available inventory of technology assets.

BROKERING VS. ENGINEERING

Integrate vs. implement. IT organizations have always supplemented from the outside when internal capabilities or capacity was not available. Infrastructure needs guidelines on what assets and associated services are to be acquired from aligned market vendors and which best serve the interests of the business by remaining fully in-house. Operations needs to train or acquire the complementary skills while still maintaining a legacy footprint during the transition.

CLOUD AGNOSTICISM

The question of cloud is no longer up for debate; the average 5K-person enterprise has 288 SaaS apps and 4.5 cloud environments. The question of vendor lock-in, however, is alive and well. Objective-focused operational frameworks and Open API-based command and control technology enables the business to choose the cloud best suited to characteristics of the workload, not the one that just happens to check mundane operational boxes.

2022 I&O Priorities

GROUP VS. INDIVIDUAL ACCOUNTABILITY

Modern leadership is a collaborative endeavor. Standards are not so much set as they are negotiated. Methodologies like Agile lean toward Centers of Excellence and Communities of Practice rather than review and approval boards. Ops must move beyond single scarlet letters in RACI diagrams, much as Infrastructure must safeguard shared resources against conflicting expressions of intent. Both need to ensure as many expressions as possible can be realized.

Authors

JOHN ANNAND
PRINCIPAL RESEARCH DIRECTOR

Figuring out the true nature of the “Turbo” button of his 486DX100 launched John on a 20-year career in managed services and solution architecture, exploring the secrets of HPC, virtualization, and DIY WANs built with banks of USR TotalControl modems. Today he focuses his research and advisory on software-defined infrastructure technologies, strategy, organization, and service design in an increasingly Agile and DevOps world.

TROY CHEESEMAN
PRACTICE LEAD

Throughout his career, Troy has championed large enterprise-wide technology transformation programs, remote/home office collaboration and remote work strategies, BCP, IT DRP, IT Operations and expense management programs, international right placement initiatives, and large technology transformation initiatives (M&A). Additionally, he has deep experience working with IT solution providers and technology (cloud) start-ups.