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The Future of IT Audit

The future of IT audit isn't just the future of a profession; it's the future of emerging technologies, and how technological advances and shifts will drive change across IT audit, as well as business and industry worldwide. IT audit is no stranger to change; the field has been evolving since the advent of electronic data processing in the enterprise world in the 1960s.

Much of that development has been spurred by emerging technologies and advances in computational power. Today, we find IT audit about to undertake some of its most significant changes as advances in artificial intelligence, data analytics and machine learning are poised to disrupt the profession and the professional community.

We've already begun to see this reinvention happen. Tentatively, enterprises are embracing AI, machine learning and data analytics tools throughout the organization, striving to increase overall security and drive efficiencies. It is not an understatement to say that the audit team of today will likely not exist, in its current form, within the next 5-10 years.

ISACA believes that, because of the rapid advancement of technology, there must be a focused effort to explore the needs of tomorrow's IT auditors. Equally importantly, multi-stakeholder discussions must take place regarding educational systems and pipelines, and what adjustments or realignments may be needed to best prepare tomorrow's professionals.

Gartner estimated that by 2021, up to 40% of the staff in IT departments could become 'versatilists,' professionals able to helm multiple roles, both business- and technology-related.[1] This will directly affect the field of IT audit (and all IT pursuits), as well as the IT audit professional community.

Today's IT auditors will become more aligned with enterprise objectives, and to do so, they will need to not only welcome technology changes, but be able to master those new technologies as well as the ways in which those changes can improve enterprise operations and processes. This is not optional; as enterprises continue to implement technology solutions to augment their human workforces, acclimation for IT audit professionals will become necessary.

To deliver effective change in the years ahead, IT auditors will need to be involved in their organizations' significant technology projects from the early stages and throughout the entirety of the projects. At present, this does not happen consistently, and opportunities to add value are often missed. The results of a recent joint survey by ISACA and Protiviti indicate that, among large companies (those with revenue greater than US $5 billion), only 16 percent of IT audit functions have a significant level of involvement in major tech projects, while 45 percent have a moderate level of involvement.[2] Slightly more than two-thirds of respondents (68 percent) become involved in technology projects only in the post-implementation phase; worse still was that 10 percent of

[1] Source: Gartner (various authors); *Top Strategic Predictions for 2018 and Beyond: Pace Yourself, For Sanity's Sake*; September 29, 2017
[2] Source: ISACA and Protiviti (various authors); *Business and Digital Transformation's Effects on IT Audit Groups*; 2018

respondents indicate that IT audit had no involvement in significant technology projects.[3] As emerging technologies continue to impact IT audit, this will only result in more missed opportunities to add value.

Continuous audit, the impacts of AI and blockchain technologies on audit, and even advances in augmented and virtual reality mean that the future of audit and technological advancement is a mutual one, affecting the IT audit profession, its professionals and its processes. The men and women working in IT audit will require different and more finely honed skills; the processes they employ will maximize efficiencies and accuracy, and lead to improved audit planning. Much of this top-level integration of IT audit will be due to its role within overall security and cyber resilience efforts, as well to the ways in which professionals and processes within IT audit evolve and become more integrated within the daily execution of enterprise operations. The line between IT audit as a continuous process and enterprise operations will blur and eventually vanish, as identification and correction time frames compress dramatically, and corrective actions can be taken in real- or near-real-time.

It is at this point that the future of IT audit—and IT auditors—becomes intertwined with the future of cyber resilience and information and cybersecurity. As emerging technologies and their transformative impacts on enterprises are increasingly felt, they will bring with them new privacy and security risks that will need to be addressed. In a recent ISACA/Protiviti study, today's IT audit professionals cited privacy and information and cybersecurity challenges as being among their top concerns with respect to emerging technologies and enterprise transformation.[4]

Tomorrow's IT audit professionals will be a part of what Deloitte has labeled the "augmented workforce," professionals adept at not only working with colleagues, but with technologies capable of being force multipliers to their work.[5] This will be a critical component of driving the advancement of IT audit as a profession, as well as the integration of IT audit within overall cyber resilience and security endeavors. Tomorrow's IT auditors will likely have diverse backgrounds, enriching their IT audit skills with familiarity and expertise in data science, machine learning and AI, and non-biased algorithm generation, as well as an array of other fields that will all take on increasing significance for audit professionals.

ISACA sees this "augmented workforce" impacting the IT audit profession in two ways. In the immediate term, we expect to see greater co-sourcing of talent to meet the needs of the enterprise; organizations will look to bring aboard contractors, consultants or temporary staff with specific skillsets to assist them in the digital and cognitive transformations of their enterprise.

Longer-term, the skills, knowledge and abilities of IT auditors will undergo seismic change, leading to curricula more focused on teaching the skills urgently needed in the workforce, rather than in the theory that underpins those skills. Likewise, up-skilling and re-skilling will occur more frequently and on a far shorter timeline. We're already beginning to see this trend occur within the freelance community. Research by Edelman Intelligence in 2017 for the freelance community website Upwork indicated that 55 percent freelancers had participated in skill-related education or training within the prior six months—compared to only 30 percent of their non-freelancing peers.[6] The coming years will likely see that trend break free and make its impact felt across the breadth of IT audit professionals.

Within the next half-decade, audit teams will very probably include data scientists among their ranks; within the next decade, we could see junior staff replaced or augmented by AI or other technologies, and increasing reliance on contract employees, rather than full-time staff.

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[3] *ibid*

[4] *ibid*

[5] Deloitte (various authors); *2017 Deloitte Global Human Capital Trends: Rewriting the rules for the digital age*, Deloitte University Press, February 27, 2017

[6] Edelman Intelligence (for Upwork and Freelancers Union); *Freelancing in America: 2017*; September 2017

In addition, we could see the ranks of IT auditors swell as AI usage becomes more prevalent in enterprises and continuous audit exposes thousands of anomalies. And then we could see the need for IT auditors as we currently know them plummet, as AI technologies learn from their early efforts, make corrections, and the number of anomalies drops from thousands to dozens.

Conclusion

IT audit will be increasingly important in the years ahead, but it won't resemble the IT audit of today. The advancement of technologies like AI and machine learning, augmented and virtual reality, and distributed ledger technologies like blockchain all will likely play roles in evolving IT audit. Globally, enterprises have begun to place greater emphasis on IT audit throughout Board and C-suite leadership; these efforts will continue, and likely become commonplace within the next decade.

The future evolution of IT audit will not solely affect enterprises, though. In fact, the impact on enterprises and their processes might be the least of evolving IT audit's impacts. Instead, the biggest changes will occur within IT audit's professional corps, and within education efforts to train the men and women who will become tomorrow's IT professionals.

IT audit's evolution means enterprises will evolve as well—and they will need to. It's not just efforts to protect the enterprise that will evolve; the efforts to assail those protections will evolve as well. There always will be a need for well-trained, highly skilled personnel in IT audit, and all professions that will become part of enterprise cyber resilience and security efforts. ISACA does not see a 'stop point' for the evolution of the IT audit profession and, similarly, we believe there can be no halt to the betterment and evolution of the IT audit professional. Rather, it is a profession of ongoing learning and adjustment.

Continued support for education and training and remaining committed to the responsible advancement of technologies such as AI that will drive growth and development in IT audit have received attention in the past, and must receive renewed attention in the future. The questions that will need to be addressed as technologies evolve will require thoughtful consideration, with an eye on tomorrow, rather than an emphasis on half-measures today. Likewise, there must be a focused effort to ascertain the needs of tomorrow's IT auditors and begin reconfiguring educational and training systems and pipelines. If we wait to prepare tomorrow's workforce, we do the future a disservice; the time to build a storm-proofed home is before the storm arrives, not while it rages.

The IT auditor of the future has the opportunity to make a larger impact on the enterprise. He/she will have knowledge of the technologies of the day and work side-by-side with the project creators and coordinators to ensure alignment, increased compliance throughout the project, and better business results.