

Internal Audit Role in Artificial Intelligence

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Abstract

The paper aims to emphasize the transformations occurring in the internal audit field at global level, in these changing times, due to machine intelligence development. The artificial intelligence technology impact on businesses is huge, providing opportunities and challenges altogether. The internal audit is changing, the auditors need to understand the basics of artificial intelligence, to identify their the roles they ought to play and the exposure they take, risks and opportunities of AI; they need to get ready for the change, reshape their role and adapt to process automation.

Key words: internal audit, artificial intelligence, machine learning, augmented intelligence, cybersecurity.

J.E.L. classification: F60, J01, M42, M48, O3, Q55

1. Introduction

We live in a world where everything gets digital, we navigate the internet using voice search, we started to control our home devices with Alexa (Amazon), Siri and Cortana play the role of personal assistants, write us messages, check the weather, find best routes and read us the news (Apple / Microsoft) and Google Assistant already acts like a real secretary, can make all communication for us, being able to understand the tone, the various emotions, adapt and respond in consequence without getting noticed that it is not actually, a human. Three years ago, Uber hired almost 30% of the scientists from National Robotics Engineering Centre at Carnegie Mellon University, US (The Economist, 2016a), so we may very soon order our cab to drive us wherever we want, while we rest in a self-driving car and more and more companies hunt tech students ever since their college years, to get them employed.

2. Theoretical background

Artificial intelligence is a fairly old concept, since the 1950's Alan Turing test. The scientist realized a test proving that a machine can be intelligent and manifests the identical communication behavior as a human, being evaluated by a human analyst. Artificial intelligence refers to cognitive abilities to perform augmenting or simulating human thinking and is more and more present in daily life of people.

The AI impact is huge, as many occupations will cease to exist in present form, due to computerization, starting with tax preparers, accountants and auditors, taxi drivers, administrative assistants and secretaries, flying crew and pilots, dispatchers and economists (Osborne, 2013).

Types of AI and opportunities

For sure the AI has evolved galopantly in the last decade and has a bright future ahead.

Mainly, AI is of four kinds and is applied in internal audit as it follows:

- ✓ Type 1 - reactive machines programed on responsive repetitive reactions, use for big data processing, and facilitate routine, manual tasks, replacing human repetitive actions to avoid mistakes. They are used since the Industrial Revolution (1920's), when machines started to replace labor in factories;
- ✓ Type 2 - machines with limited memory, facilitate manual tasks, able to replace multiple processes, saving time and increasing efficiency;
- ✓ Type 3 - machines with theory of mind, replace cognitive tasks, able to adjust their behavior according to peoples thoughts, feelings, can respond to demands in a intuitive way – replacing humans in dangerous situations with robots and drones;
- ✓ Type 4 - *self-aware machines*, using cognitive tasks can predict people's feelings and act accordingly, from sales to a disaster event.

AI will eventually allow audit to be more effective, just by providing more coverage and consistency. Internal audit has the role to assess, comprehend and share the impact of artificial intelligence role in creating value for the company. (IIA 2017a)

3. Consequences of AI appliance

Introducing the AI in our lives and businesses comes with consequences, our jobs will change, the future of work will change, many of the current work activities will get automated and as a study of McKinsey says, by the year of 2025, one third of the total world jobs will be taken by smart robots (McKinsey 2017). Not only the factory jobs or clerks will get automated but also sales jobs, accounting, technical jobs, communication, etc. There are activities that can easily get automated in at least 60% of the actual jobs, as McKinsey highlights in their study. Besides this situation, labor market confronts nowadays with other problems, such as underemployment, unemployment, migration, gap between men and women and especially youth unemployment.

Companies find it hard to occupy their entry-level vacancies as the freshly graduates do not possess the required skills on the work market. This thing happens because the educational system is not updated to the changes that already took place in work domain in the last decade. In fact, universities are lacking students, and businesses are lacking adequate employees. 60% of the graduates are unprepared for work.

The solution lies in adapting the educational system on the actual nature of work and involves the youth in acquiring skills and knowledge that would easily translate in finding them jobs.

Digital jobs platforms, already implemented are a good solution for the 16,80% unemployed youth in European Union in 2018 – which is still much better than the 24% in 2012. (According to www.tradingeconomics.com, youth refers to persons 15-25 years old). Talent platforms help a lot on solving the maze of labor market, by fitting right people on the jobs.

Independent work is another implemented solution. Increasingly more people started to work independently, according to their needs and flexibility, using digital platforms. The Future of Employment Study, conducted by Frey & Osborne, analyses more than 700 occupations and shows the level of susceptibility to computerization. The table below shows a fraction of these future obsolete occupations.

Table no. 1: Future occupations

Jobs susceptible to computerization	Probability
Telemarketers Tax Preparers Insurance Underwriters Cargo and Freight Agents	99%
Bookkeeping, Accounting, and Auditing Clerks Insurance Claims and Policy Processing Clerks Credit Analysts	98%
Cashiers Credit Authorizers, Checkers, and Clerks	97%
Receptionists and Information Clerks	96%

Bill and Account Collectors	95%
Accountants and Auditors Waiters and Waitresses, Couriers and Messenger, Cooks Hotel, Motel, and Resort Desk Clerks	94%
Taxi Drivers and Chauffeurs	89%
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	85%
Medical Secretaries	81%
Bartenders	77%
Computer Support Specialists	65%
Market Research Analysts and Marketing Specialists	61%
Massage Therapists	54%
Computer Programmers	48%
Economists	43%
Actors	37%
Flight Attendants	35%
Film and Video Editor	31%
Sales Representatives	25%
Concierges	21%
Kindergarten Teachers	15%
Floral Designers	4,7%
Health Diagnosing and Treating Practitioners	2%
Makeup Artists, Theatrical and Performance	1%
Psychologists	0,43%
Healthcare Social Workers	0,35%

Source: Frey C.B., Osborne M.A. (2013)

AI is also creating jobs, and like every change, comes along with goods and downsides. We can make an association with the internet – the advantages of net are incomparable greater than the inconveniences it provoked; from the jobs point of view, internet has created 2.4 times more jobs than it destroyed (McKinsey, 2011). And still, at this moment, half of the globe population is offline. Access to internet, technology, digitizing will create added value for people, companies and entire world economy.

4. AI affecting IA

Internal auditors concern about being replaced with artificial intelligence is totally realistic, being not a problem of whether it will happen but when it will happen.

Internal audit needs to provide added value and support on strategic and operational risks, to adapt to new emerging risks: data analytics, cybersecurity, regulation and politics, talent management.

Actually, while the auditing role is changing, the auditors need to understand the basics of AI, to identify the roles they ought to play and the exposure they take: risks and opportunities of artificial intelligence.

The adoption of AI in organizations comes both with risks and opportunities.

Risks

According to IIA (IIA 2017a), the risks arising from artificial intelligence appliance in companies are many and diverse:

- artificial intelligence might adopt human logic deviations or unknown tendencies in the technology;
- various ethic and reputational risk issues;
- highly costs on adopting AI;
- competition risks on non-adopting AI.

Internal audit need to encompass risks regarding AI when organizations are setting their goals and establish the enterprise risk tolerance, facing changes in the artificial intelligence implementation. They need to take into consideration the AI strategy, digital strategy, AI governance and the Human Factor (IIA 2017a).

The AI governance – refers on assessing current governance and make adaptations where needed, so the AI is monitored and the organization values are expressed.

Data and analytics transform the audit function, helping it increase in quality and effectiveness. Data quality is another field to pay attention, as internal audit should provide assurance on its comprehensiveness and accuracy.

Human factor remains a high risk, referring to ethic, morality, transparency and the black box that might impede the expectations on introducing AI. Black boxes inserted in robots can register all their actions and report in case of accidents the circumstances that led to their behavior.

Talent management is one major risk internal audit faces on implementing AI in companies, as tech talents are the ones to manage the algorithms on machine learning, using big data, collect it and model it but they are not skilled in risk analysis and governance.

Candidates for internal audit need to possess skills to combat future risks, a critical thinking, good communication, creativity and innovation skills, data analysis skills, and the desire for continuous growth. Meanwhile, they need to and analytic respect privacy and security of users data and find methods to evaluate the performance of using AI.

Cybersecurity is another attention point that need to be cared of, reevaluating cyber resilience, through the four R's, as IIA encourages in a 2017 study: resist, react, recover from cyber attacks and reevaluate the preparedness on cyber attacks (IIA 2017c).

5. Conclusions

Auditors fear that they are the first ones to be replaced by computers, on the occasion of introducing machine learning and AI, but in fact, they need to get ready for the change and reshape their role and adapt to process automation, acquire new skills and knowledge adapting to novelty and meet the new expectations of assurance according to their profession to make auditing efficient (IIA 2017c).

Internal audit should be using artificial intelligence in terms of cognitive capabilities, (that would normally need human intelligence), which translates in augmenting the human thinking or replacing it, in a natural and intuitive way. IA using the AI can provide assurance for companies helping them to distinguish truth from lies, paying special attention on ethics and aiming to improve the internal control, risk management and governance.

Innovation in audit means investing in cognitive technology, which means analyzing big data, creating assumptions and making evaluations, bringing together interaction, learning and simulating the decisional human process (KPMG 2016).

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