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The Implications of Industry 4.0 for the Auditing Profession

By **Lindiwe Nika Zimba***

The current scenario, social and economic, has shown itself to be increasingly dependent on information technologies, not only for the various facilities they provide, but also for the dynamization of processes, such as the reduction of human intervention in such processes. Nevertheless, although these technologies entail high implementation and maintenance costs, they reduce the risk of human error, as well as fraudulent data manipulation, which can be more costly to companies than these technologies, because the magnitude of the error or fraud cannot be immediately measured exactly.

Technology has profoundly influenced the evolution of the audit profession. The technologies developed with Industry 4.0 (I4.0), such as Blockchain, big data, Internet of Services (IoS), among others, will drastically change the current business model and society in general, so companies must adapt to this rapid change in the current environment.

Thus, and based on these assumptions, a study was conducted in a real work context - fieldwork at RSM Moçambique, Lda - with the objective of analysing the impact of the new technologies of I 4.0 in the Auditing profession.

"The technological development resulting from I4.0 is also affecting the auditing profession. If on the one hand the new technological components of I4.0 demonstrate how their implementation can facilitate the auditor's work and improve the decision-making process in business management, on the other hand they require new skills and knowledge to the professional exercise."

I4.0 is defined as the technological development from embedded systems to intelligent Cyber-Physical Systems that occurred in industry (Hamid et al., 2022). It combines the integration of digital technologies, such as advanced robotics, AI, sensors, cloud computing, Internet of Things (IoT), big data analytics and classification, additive manufacturing, and mobile devices, among other digital technologies, into a global value chain that is interoperable and shareable, regardless of geographic location (Lin et al., 2018; Gallab et al., 2021).

It is a revolution that enables the application of advanced technologies in top production to bring new value and services to customers and the organization itself (Khan and Turowski, 2016). Thus, this will increase the flexibility of the existing value chain by maximizing the transparency of inbound and outbound logistics, production, marketing, and all other business areas in the entity, such as accounting, legal, human resources, among others (Dai, 2017).

The application of I4.0 technology, besides the disadvantages, with the high implementation costs and a limited structure and corporate culture, has brought benefits

to organizations. Namely: it improves product quality; improves decision making; reduces operating costs and increases productivity; saves natural resources; requires new skills; reduces the number of errors; and improves product customization (Gallab et al., 2021)

Digital transformation has opened new opportunities for auditing and auditing will benefit from the technology promoted by I4.0, especially IoT, IoS, SCF and "Smart Factories" to obtain financial and operational information as well as other audit-related data from an organization and related parties. These tools drive more integrated data analysis, anomaly identification, and extraction of other useful information to provide efficiency and effectiveness to the auditor's work (Dai & Vasarhelyi, 2016). Their use has caused the auditor's effort to reduce, from information analysis to calculation. These authors argue that auditing will be an overlay of I4.0 business management processes.

For example, given the speed with which audit work can be done, a single auditor can complete several audit tasks in a short period of time (Nwachukwu et al., 2020). As such, there would be no need to hire new ones. The implication here is that practical experience will eventually be lacking in many new auditors. Thus, many companies are to some extent changing recruitment policies by placing greater emphasis on digital skills over financial skills when hiring new workers. However, the shortage of necessary skills means that some audit departments are currently forced to outsource certain digital-related activities. These barriers to using these tools emphasize the need for digital skills acquisition to understand how new technologies work and their potential impact on audit functions (Betti & Sarens, 2021).

It is visible in the fieldwork that few companies are audited by generation 4.0, for a variety of reasons. Nowadays, audit work cannot only rely on the manual process, but on computer-aided audit techniques, which support and facilitate the audit work and the auditor, making it more effective and efficient. However, we corroborate with Asif et al. (2022) that in many countries and companies the application of I4.0 in auditing is in its infancy, in the 2.0 and 3.0 audit generation (see, Karapinar, 2021). Although the same authors believe that the technologies underlying I4.0 can improve the authenticity, effectiveness, and cost-effectiveness of auditing in the long term.

The fieldwork has shown that I4.0 will improve audit quality and open a new horizon for audit firms to adapt their working methods and processes and develop their service offerings, as found by Elommal and Manita (2022). But if on the one hand, technological advances have had a great impact on information systems, bringing about changes in the operational and management processes of organizations, especially in the way financial information is handled, on the other hand, the new technologies provided by I4.0 have made the auditing profession more dynamic, enabling a more advanced and larger scale analysis of financial information, with the aim of identifying non-conformities

in real time. Situations that were only seen with the use of samples, where the credibility of the results could be relatively low.

Technology will cover all the work done by the auditor, but it will not be enough. There are several factors in the human universe that cannot be mathematized. That is, there is no way to define a model for elements such as social relations, feelings, and even thought itself, which are crucial to the auditing profession, such as professional judgment and the sensitivity to verify some anomaly.

With this work it was also possible to understand that the digital transformation and the use of new technologies provided by I4.0, in addition to assisting management, are useful in the definition of the entity's internal controls, in the improvement of decision-making processes in a timely and opportune manner, in the reduction of the length of audit procedures and, mainly, in the automation of processes, particularly in remote work/telework contexts in this new era. However, the digital transformation and the use of new technologies provided by I4.0, in addition to serving as an aid to management and the auditing professional, do not replace man in his social, sentimental, and thinking relationships, which are crucial aspects for the Auditing profession.

*Auditor | RSM Mozambique



Your Personal Guide to Cyber Security

By **Sonia Mahendra***

Technology is an integral part of our day to day lives. From online banking, to online shopping, almost everything is at our fingertips. Technology, however, changes so rapidly that it is difficult to keep up with all the new trends, updates and above all make sure that our personal information is safe.

There are choices that you can make to better protect your data. We bring you a checklist of items that will assist you to keep your equipment, software and personal data safe.

- **Protect your email;** Many email providers nowadays offer various levels of protection to your incoming and outgoing messages. Make sure that you are using a reliable email provider, which uses secure authentication (<https://>) that prevents your personal data being leaked through spam, spoofing or phishing. Do not open emails or click on links to unknown or unreliable websites.
- **Virus Protection;** We visit many websites through our electronic devices such as social media, news websites, online shopping and many others. Without proper virus protection we are at risk of identity theft, malware and potential data loss or even hardware malfunction. Make sure that you have an active firewall and a working virus protection software to protect you and your data against various cyber threats;

Did you know? Studies show that active virus protection can reduce the chance of cyber threats by 80%.

- **Strong Password;** Many of us tend to choose passwords that are easy to remember, such as birth dates, pet names or names of people that are close to us. Unfortunately, it also makes hackers' jobs easy!

Make sure to have strong passwords that are at least 8 characters long, with a mix of capital letters, small letters, numbers and symbols. Nowadays, there are also password managers that automatically create strong passwords for you and offer you the possibility to access your platforms through a single encrypted interface. A good rule is to use different passwords across various platforms.

Did you know? One of the most commonly used passwords in the world is "12345"?

- **Public Wi-Fis;** Wi-Fi hotspots in restaurants, shopping malls, hotels, airports and many public places are very common and convenient, but very often they are not

secure; Avoid entering any personal details such as passwords, credit cards or financial details while connected to a public wi-fi; Make sure your are logging in to websites that are fully encrypted (https://) and remember to log out from your accounts once you have finished using it;

- **Backup your Data**; Although your chances of suffering a cyber attack reduce by following the best practices that you learned in this article, you can never be cautious enough! Make sure to regularly backup your data. There are various options when it comes to backing up your data, from the traditional physical backup on an external hard drive or flash pen to more advanced options such as cloud backups which keep your data saved and secured at a nominal price;

“Do your part and be Cyber Smart!”

*Founder of Skill Box Consultoria | Skill Box Team

Mozambique Financial Markets

By Banco BiG Mozambique*

The inflation in Mozambique has registered a slowdown for the third consecutive month, rising to 11,25% in November. The food and non-alcoholic beverages sector has gained a leading role, by contributing with 0,54 pp positive in this variation. The monthly inflation was 0,58%, and has increased from 8,80% in October to 9,43% in November. According to the Statistic Nacional Institute (INE), Beira has been the highest with price increasement tendencies, registering an inflation of approximately in 14,10%, followed by Chimoio with 13,48%, Quelimane with 13,28%, Nampula with 12,08%, Inhambane with 11,57%, Xai-xai with 10,05%, Tete with 10,02% and Maputo with 8,63%.

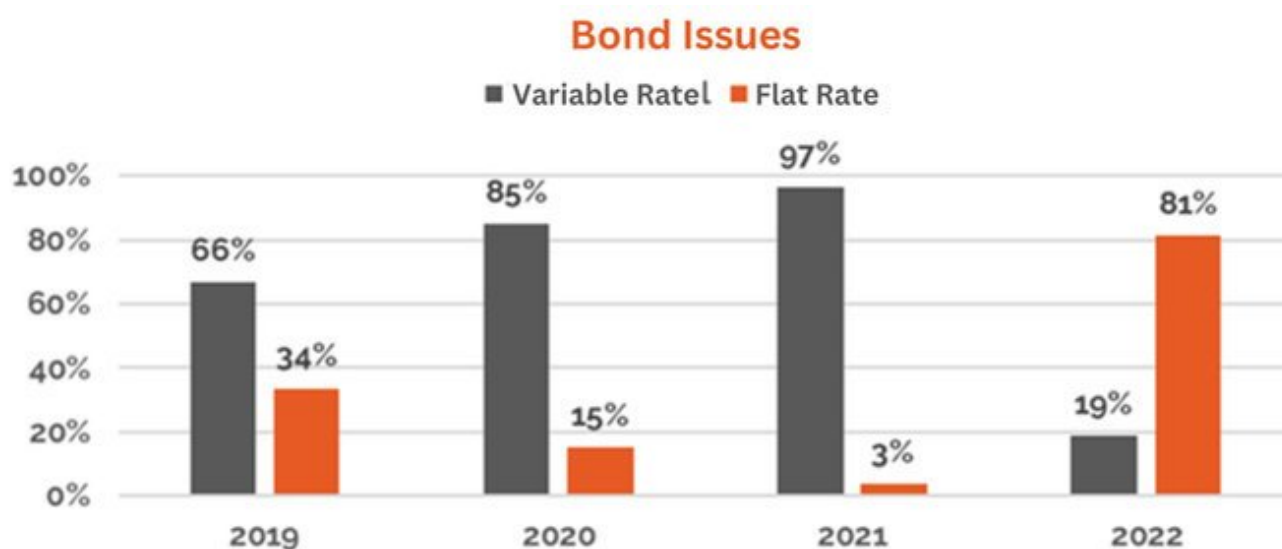
Inflation				
Date	Homologous	Average 12 Months	Monthly	Accumulated
nov/ 22	11.25%	9.67%	0.58%	9.43%
out/ 22	11.83%	9.64%	0.19%	8.80%
set/ 22	12.71%	9.23%	0.62%	8.59%

ago/ 22	12.96%	8.72%	0.59%	7.92%
jul/ 22	12.71%	8.15%	0.74%	7.29%
jun/ 22	11.49%	7.61%	0.74%	6.50%
mai/ 22	10.07%	7.19%	0.87%	5.72%
abr/ 22	8.36%	6.87%	1.36%	4.80%
mar/ 22	6.65%	6.72%	0.86%	3.40%
fev/ 22	6.62%	6.73%	0.50%	2.52%
jan/ 22	7.79%	6.68%	2.01%	2.01%

Source: National Institute of Statistics of Mozambique

PRIMARY MARKET

The Treasury bond annual program, closed in December and the treasury department has raised around MZN 49,210 million, 93% of the amount predicted in the government budget (2022). During this year the treasury department has managed to raise most of the amount through bonds with a fixed coupon of (81%) vs. bonds with variable coupons (19%), as opposed to the tendency over the last years.



SECONDARY MARKET

BVM – Shares

During 2022, the BVM shares were the highest in terms of volume of transactions,

registering a significant depreciation, with exception of the CDM shares which registered an appreciation of 16% (closing the year in MZN 58,01 /share). The CMH remained the share with the most volume of transactions, closing December with a volume above MZN 7,3 million.

According to the BVM data, the shares had an annual volume of transactions of MZN 81 million on the secondary market, 111% higher than the amount transacted in 2021 (MZN 38 million).

Shares	Price	Monthly Volume (MZN)	Δ weekly	Monthly	Δ YTD
CDM	58.01	326,302.20	-17.1%	16.0%	16.0%
HCB	2.35	224,204.00	17.5%	6.3%	-21.7%
CMH	2,100.00	7,301,750.00	0.0%	0.0%	-30.0%
EMOSE	17.00	12,200.00	13.3%	54.5%	-15.0%

The table above shows the shares with higher transaction volume over the last (6) six months.

BVM – Bonds

During 2022 on the secondary market, were transacted around MZN 15.5 billion in Treasury Bonds, +33% higher than the MZN 11.7 billion transacted in 2021. On the other hand, MZN 81 million were transacted Corporate Bonds, the volume of transactions registered on the secondary market were around MZN 81 million, -3,5x lower than the amount transacted in the corresponding period (MZN 282 million).

Treasury Bonds

Bonds	Current Coupon	Type of Coupon	Next Coupon	Maturity	Yield
OT Suppliers 2019	7.56%	Inflation + 0.5%	29-jan-23	29-jan-29	20.51%
OT 2020 S3	17.06%	BT's + 1.50%	11-mar-23	11-mar-23	17.49%
OT 2020 S10	17.06%	BT's + 1.50%	07-apr-23	07-oct-24	18.55%
OT 2021 S1	16.94%	BT's + 1.50%	10-feb-23	10-feb-25	18.87%
OT 2021 S2	16.75%	BT's + 1.25%	24-feb-23	24-feb-26	19.85%
OT 2021 S4	17.63%	BT's + 1.00%	21-apr-23	21-apr-26	20.00%
OT 2021 S8	16.31%	BT's + 0.75%	22-mar-23	22-sep-25	19.45%
OT 2021 S10	14.50%	Fixed	10-may-23	10-nov-25	19.57%
OT 2022 S1	14.50%	BT's + 1.00%	09-feb-23	09-feb-27	20.71%
OT 2022 S3	15.25%	BT's + 1.75%	09-mar-23	09-mar-30	20.39%
OT 2022 S7	17.75%	Fixed	10-feb-23	10-aug-26	20.28%

OT 2022 S9	17.75%	Fixed	21-mar-23	21-sep-26	20.39%
OT 2022 S10	19.00%	Fixed	23-may-23	23-nov-26	20.52%
MOZAM (USD)	5.00%	Fixed	15-mar-23	15-sep-31	13.07%

Corporate Bonds

Bonds	Current Coupon	Type of Coupon	Next Coupon	Maturity	Yield
Bayport 2019 S1	20.00%	Fixed	12-apr-23	12-apr-24	20.68%
Bayport 2019 S2	19.00%	Fixed	21-apr-23	21-oct-24	21.03%
Bayport 2020 S1	16.00%	Fixed	27-mar-23	27-mar-25	21.31%
Bayport 2020 S2	21.53%	BT's + 6.00%	30-mar-23	30-mar-25	21.32%
Bayport 2021 S1	22.15%	BT's + 4.50%	21-may-23	21-may-26	22.06%
Bayport 2021 S2	19.93%	BT's + 4.50%	26-jan-23	26-jul-26	22.18%
Bayport 2021 S3	19.93%	BT's + 4.50%	27-jan-23	27-jul-25	21.53%
Bayport 2021 S4	20.03%	BT's + 4.50%	16-mar-23	16-sep-26	22.27%
Visabeira 2020	23.00%	FPC + 4.75%	23-mar-23	23-mar-26	-

Source: Mozambique stock market and Banco BiG Mozambique, S.A

Total Transactions on the Secondary Market

During 2022, the secondary market continued to show a remarkable growth compared to the previous years with a cumulatively transacted volume of MZN 15.7 billion, 30% higher than the volume transacted in 2021.

*Investment Banking

News

Arko Seguros Promotes a Training Workshop on the Future of Insurance

Products Based on Cryptocurrencies

Source: **Diário Económico***



Arko Companhia de Seguros recently held a training workshop on the "Future of Insurance Products", to provide training for partners and customers in emerging aspects in the insurance market in line with new technological developments, namely the distribution of cryptocurrencies which has been playing an important role in the company's global transactions.

CEO of Arko Seguros, Miguel Navarro, said that in this contemporary world that we are living, innovation and observation on the new technological trends are crucial to remain relevant in a highly competitive market.

"Surely the insurers play an important role in protecting the interests of the customer. This role does not fall behind the current investments that have been dominating the financial market, namely cryptocurrencies. Therefore, aware of its relevance, we believe in technology and always strive keep up with the new trends and new technological products", said Navarro.

Because they are fully digital and use encryption to ensure the transactions are carried out, the insurer considers that the cryptocurrencies carries its own complexities, an issue that can be solved if the assets are 'offline' and the insured has an efficient risk

management whereby, through a blockchain technology [process of transaction registration and asset management in a business network] it allows the registration of transactions and the asset tracking on a network.

*Economic, Financial and Business information portal



Government will hire insurer to cover for risks against extreme events

Source: **e-global**

The Mozambican government has decided to hire an insurer who may cover parametric risks against cyclones and precipitation. In this way they hope for better preparation to extreme events that cyclically affect the country.

This contract goal is to cover for disaster risk and resilience management program, which will be implemented during the current rainy season, in partnership with the World Bank.

According to Vice-Minister of Economy and Finance, Carla Louveira, the cover against Natural Disasters is estimated in four million dollars.

In turn, World Bank representative, Raimound Blound, said he is pleased with the implementation of the amount allocated for disaster and risk management in Mozambique. However, he also stressed that there are measures which need to be implemented to strengthen prevention.

Post of the Month

The advertisement is split into two main sections. On the left, a dark grey vertical panel contains white and orange text. On the right, a photograph of a smiling family (a man, a woman, and two young children) is shown. The text on the left panel reads: 'THINK AHEAD! ENSURE FINANCIAL SECURITY FOR YOU AND YOUR FAMILY' in white, followed by 'CONTACT US' in orange, 'WE MAKE IT SIMPLER!' in white, and contact information 'www.carlylepartners.llc' and 'corporate@carlylepartners.llc' in white. At the bottom of the panel, the 'Carlyle Partners' logo is displayed in orange, with 'Health · Life · Pensions' in smaller white text below it.

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